UTILITY PATENT APPLICATION TRANSMITTAL

Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	35.C13009
First Named Inventor or Application Identifier	
SURESH JEYACHANDRAN	
Express Mail Label No.	

jc523 U.S. PTO 09/170656 10/14/98

jc535 U.S. PTO 10/14/98

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

1. [ ] Fee Transmittal Form *(Submit an original, and a duplicate for fee processing)*
2. [X] Specification — *Total Pages* 135
3. [X] Drawing(s) *(35 USC 113)* — *Total Sheets* 148
4. [X] Oath or Declaration — *Total Pages* 2
   a. [ ] Newly executed (original or copy)
   b. [X] Unexecuted for information purposes
   c. [ ] Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 17 completed)* ***[Note Box 5 below]***
      i. [ ] DELETION OF INVENTOR(S) Signed Statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
5. [ ] Incorporation By Reference *(useable if Box 4c is checked)* The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4c, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. [ ] Microfiche Computer Program *(Appendix)*
7. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. [ ] Computer Readable Copy
   b. [ ] Paper Copy (identical to computer copy)
   c. [ ] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. [ ] Assignment Papers (cover sheet & document(s))
9. [ ] 37 CFR 3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney
10. [ ] English Translation Document *(if applicable)*
11. [ ] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations
12. [X] Preliminary Amendment
13. [X] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
14. [ ] Small Entity Statement(s) [ ] Statement filed in prior application Status still proper and desired
15. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. [X] Other: Request for Approval of Drawing Changes

17. If a CONTINUING APPLICATION, *check appropriate box and supply the requisite information:*
    [ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No. ___/_____

18. CORRESPONDENCE ADDRESS

[X] Customer Number or Bar Code Label — 05514 (Insert Customer No. or Attach bar code label here) — or [ ] Correspondence address below

NAME					
Address					
City		State		Zip Code	
Country		Telephone		Fax	

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c))	61-20 =	41	X $ 22.00 =	$ 902.00
	INDEPENDENT CLAIMS (37 cfr 1.16(b))	9-3 =	6	X $ 82.00 =	$ 492.00
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			$270.00 =	$ 0.00
				BASIC FEE (37 CFR 1.16(a))	$ 790.00
			Total of above Calculations =		$2,184.00
	Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28).				
				TOTAL =	$2,184.00

19. Small entity status

a. ☐ A Small entity statement is enclosed

b. ☐ A small entity statement was filed in the prior nonprovisional application and such status is still proper and desired.

c. ☐ Is no longer claimed.

20. ☒ A check in the amount of $ 2,184.00 to cover the filing fee is enclosed.

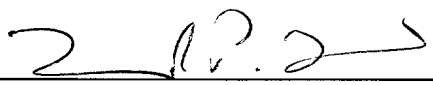
21. ☐ A check in the amount of $ _____ to cover the recordal fee is enclosed.

22. The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 06-1205:

a. ☒ Fees required under 37 CFR 1.16.

b. ☒ Fees required under 37 CFR 1.17.

c. ☐ Fees required under 37 CFR 1.18.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED	
NAME	Leonard P. Diana (Reg. No 29,296)
SIGNATURE	
DATE	October 13, 1998

F502\A619441\mfg

35.C13009 PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	:	Examiner: NYA
SURESH JEYACHANDRAN ET AL.	)	
	:	Group Art Unit: NYA
Appln. No.: NYA	)	
	:	
Filed: Herewith	)	
	:	
For: APPARATUS AND METHOD FOR PERFORMING A SPECIFIC PROCESS BASED ON A SETUP CONDITION, AND A STORAGE MEDIUM FOR SUCH A PROGRAM	) :) :) :)	October 13, 1998

The Assistant Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Preliminary to examination, please amend the above-identified application, filed herewith, as set out in the attached Request For Approval Of Drawing Change.

The proposed change is to conform the labeling of the drawings to conform to the description thereof in the specification, e.g., at page 20, line 18, and at pages 112-14.

Applicants respectfully request favorable consideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All

09470556 - 101498

correspondence should be directed to our below listed address.

Respectfully submitted,

Attorney for Applicants

Registration No. 49,326

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

09170656.104498

35.C13009 PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	:	Examiner: NYA
SURESH JEYACHANDRAN ET AL.	)	
	:	Group Art Unit: NYA
Appln. No.: NYA	)	
	:	
Filed: Herewith	)	
	:	
For: APPARATUS AND METHOD FOR PERFORMING A SPECIFIC PROCESS BASED ON A SETUP CONDITION, AND A STORAGE MEDIUM FOR SUCH A PROGRAM	)	October 13, 1998

The Assistant Commissioner for Patents
Washington, D.C. 20231

REQUEST FOR APPROVAL OF DRAWING CHANGE

Sir:

With the Examiner's approval, and at such time as a Notice of Allowance may issue, Applicants propose to amend the drawing in the above-identified application as follows:

In the Fig. on the drawing sheet bearing the indication "144/148" at the top margin, please change the Fig. number from "137A" to --142--. The proposed change is indicated in red on the attached duplicate copies of the pertinent figure.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All

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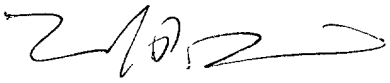
correspondence should continue to be directed to our below listed address.

Respectfully submitted,



Attorney for Applicants

Registration No. 29,286

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

09470055.470

APPARATUS AND METHOD FOR PERFORMING A SPECIFIC PROCESS BASED ON A SETUP CONDITION, AND A STORAGE MEDIUM FOR SUCH A PROGRAM

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to an information processing apparatus and a method for performing a process, such as a notification, based on a specific execution condition, and a storage medium on which such a program is stored.

Related Background Art

Conventionally, when an error occurs a warning is generated by an information processing apparatus, and when printing is completed a printer issues a print end notification to a host apparatus.

However, since the above processing is performed by a fixed function that the apparatus provides for a user, the user only selects the employment of the function, and can not freely set up and execute a desired process having a desired condition for information processing.

For example, when a user receives information, as the recipient he or she confirms the contents of the information, and, as needed, issues a print instruction to print it or transmits the information to another user. Therefore when information is received from a

specific source, a user must repeat the print instruction each time information is received, even when he or she always desires to print the received information.

In addition, when an error, such as paper out or a paper jam, occurs in a printer that has been instructed to perform printing, a user must correct the error and again issue a print instruction. When a computer that has issued a print instruction is located at a distance from a printer, a user is not aware that there has been a failure at the distant printer until he or she issues a print instruction and obtains the print results from the printer. Thus, when there has been a failure at a distant printer the user must go to the printer to acquire necessary data, and must then return to the computer and issue a print instruction.

Furthermore, in order to resolve this problem, it is preferable that the user be able to employ the system easily, without any complicated programming being required.

Further, a conventional printer issues the above described print end notification when the spooling of print data has been completed, and the actual printing end occurs later than the time at which the notification is issued. Therefore, although the immediate issuance of a notification is not always acceptable, conventionally, the notification is issued

immediately after an event that triggers a notification has occurred. The triggering of the notification is limited to the termination of the processing.

SUMMARY OF THE INVENTION

It is, therefore, one objective of the present invention to provide an apparatus and a method for performing desired processing when various conditions related to object information are established.

It is another objective of the present invention to provide an apparatus and a method for performing desired processing when a specific condition is established.

It is an additional objective of the present invention to provide an apparatus and a method for issuing a notification when a desirable time period has elapsed since the occurrence of an event that triggers the notification.

To achieve the above objectives, according to one aspect of the present invention, an information processing apparatus comprises:

attribute designation means for designating an attribute of object information;

process designation means for designating a process for the object information;

setup means for setting up a command to be executed; and

execution means for executing the command set up by the setup means upon the performance of the process designated by the process designation means for the object information having the attribute designated by the attribute designation means.

According to another aspect of the present invention, an information processing method comprises:

an attribute designation step of designating an attribute of object information;

a process designation step of designating a process for the object information;

a setup step of setting up a command to be executed; and

an execution step of executing the command set up at the setup step upon the performance of the process designated at the process designation step for the object information having the attribute designated at the attribute designation step.

According to an additional aspect of the present invention, provided is a storage medium on which is stored a program, which comprises:

an attribute designation step of designating an attribute of object information;

a process designation step of designating a process for the object information;

a setup step of setting up a command to be executed; and

an execution step of executing the command set up at the setup step upon the performance of the process designated at the process designation step for the object information having the attribute designated at the attribute designation step.

According to a further aspect of the present invention, an information processing apparatus comprises:

designation means for designating a status that is employed as an execution condition for a process to be performed;

setup means for setting up, together with the status, the process that is to be performed when the status designated by the designation means has occurred;

determination means for determining whether the status designated by the designation means has occurred; and

execution means for, when the occurrence of the status is determined by the determination means, performing the process that is set up with the status.

According to still another aspect of the present invention, an information processing method comprises:

a designation step of designating a status that is employed as an execution condition for a process to be performed;

a setup step of setting up, together with the

status, the process that is to be performed when the status designated at the designation step has occurred;

a determination step of determining whether the status designated at the designation step has occurred; and

an execution step of, when the occurrence of the status is determined at the determination step, performing the process that is set up with the status.

According to a still further aspect of the present invention, provided is a storage medium on which is stored a program, which comprises:

a designation step of designating a status that is employed as an execution condition for a process to be performed;

a setup step of setting up, together with the status, the process that is to be performed when the status designated at the designation step has occurred;

a determination step of determining whether the status designated at the designation step has occurred; and

an execution step of, when the occurrence of the status is determined at the determination step, performing the process that is set up with the status.

Further, according to yet another aspect of the present invention, an information processing apparatus comprises:

execution means for performing a process for

object information to be processed;

notification destination designation means for designating a destination for a notification related to the object information;

trigger setup means for setting a trigger for the notification;

time setup means for setting a time period extending from the time at which the trigger for the notification is tripped until the notification is issued; and

notification means for, when the time period that is set by the time setup means has elapsed since the trigger for the notification that is set by the trigger setup means has been tripped, issuing a notification to the notification source that is designated by the notification destination means.

According to yet an additional aspect of the present invention, an information processing method comprises:

an execution step of performing a process for object information to be processed;

a notification destination designation step of designating a destination for a notification related to the object information;

a trigger setup step of setting a trigger for the notification;

a time setup step of setting a time period

extending from the time at which the trigger for the notification is tripped until the notification is issued; and

a notification step of, when the time period that is set at the time setup step has elapsed since the trigger for the notification that is set at the trigger setup step has been tripped, issuing a notification to the notification source that is designated at the notification destination step.

According to yet one further aspect of the present invention, provided is a storage medium on which is stored a program, which comprises:

an execution step of performing a process for object information to be processed;

a notification destination designation step of designating a destination for a notification related to the object information;

a trigger setup step of setting a trigger for the notification;

a time setup step of setting a time period extending from the time at which the trigger for the notification is tripped until the notification is issued; and

a notification step of, when the time period that is set at the time setup step has elapsed since the trigger for the notification that is set at the trigger setup step has been tripped, issuing a notification to

the notification source that is designated at the notification destination step.

Other objectives and advantages, in addition to those discussed above, will become apparent to those skilled in the art during the course of the description of a preferred embodiment of the invention that follows. In the description, reference is made to accompanying drawings, which form a part of the description and which illustrate an example of the invention. The presentation of such an example, however, does not constitute an exhaustive recital of the various possible embodiments of the invention, and therefore, to determine the scope of the invention reference should be made to the claims that follow.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a diagram illustrating the functional arrangement of one embodiment of the present invention;

Fig. 2 is a detailed diagram illustrating the functional arrangement of the embodiment;

Fig. 3 is a diagram showing the transmission of information in accordance with the manipulation of input devices performed by a user;

Fig. 4 is a detailed diagram showing the sequence of the processing performed until a command entered by a user is executed;

Fig. 5 is a diagram showing the sequence of the

processing performed to display for a user the processing results and a status change;

Fig. 6 is a diagram illustrating the functional relationship existing among a plurality of devices;

Fig. 7 is a diagram illustrating a system configuration according to the embodiment;

Fig. 8 is a diagram illustrating the essential hardware arrangement according to the embodiment;

Fig. 9 is a flowchart showing the order of activation when power is switched on;

Fig. 10 is a flowchart showing the processing performed by a client component;

Fig. 11 is a flowchart showing the processing performed by a server component upon receiving a request from a client;

Fig. 12 is a flowchart showing the CancelAllPrinterjobs processing;

Fig. 13 is a flowchart showing the GetAllPrinterjobs processing;

Fig. 14 is a flowchart showing the SetPrinterJobStatus processing;

Fig. 15 is a flowchart showing the processing performed for requests "Login" and "Logout";

Fig. 16 is a flowchart showing the processing performed for requests "GotoOtherDevice" and "GotoDesktop";

Fig. 17 is a flowchart showing the processing

performed for requests "Search", "Help" and "Receive Job/Receive Notification";

Fig. 18 is a flowchart showing the IdAnalyze processing;

Fig. 19 is a flowchart showing the DUMMY processing;

Fig. 20 is a flowchart showing the IdAnalyzeNotify processing;

Fig. 21 is a flowchart showing the ReceiveHttpNotification processing;

Fig. 22 is a flowchart showing the processing performed for requests "Print", "Send", "Delete", "Reschedule", and "Preview";

Fig. 23 is a flowchart showing the PrintJob processing;

Fig. 24 is a flowchart showing the SendJob processing;

Fig. 25 is a flowchart showing the SendJob transmission processing;

Fig. 26 is a flowchart showing the CancelJob processing;

Fig. 27 is a flowchart showing the SendNotification processing;

Fig. 28 is a diagram showing the relationship between input information for a server and corresponding processes;

Fig. 29 is a flowchart showing the processing

performed beginning with the activation of a daemon;

Fig. 30 is a flowchart showing the notification processing performed by a daemon module;

Fig. 31 is a diagram showing the relationship between the job types that are handled by the daemon and corresponding processes;

Fig. 32 is a flowchart showing the PrintPrinterJob processing;

Fig. 33 is a flowchart showing the SendJob processing;

Fig. 34 is a flowchart showing the ReceiveJobData processing;

Fig. 35 is a flowchart showing the GetListOfJobAttributes processing;

Fig. 36 is a flowchart showing the PollJob processing;

Fig. 37 is a flowchart showing the PollNotify processing;

Fig. 38 is a flowchart showing the CancelAction processing;

Fig. 39 is a flowchart showing the EditAction processing;

Fig. 40 is a flowchart showing the EditAction processing;

Fig. 41 is a flowchart showing the RescheduleAction processing;

Fig. 42 is a flowchart showing the

RescheduleAction processing;

Fig. 43 is a flowchart showing the RescheduleAction processing;

Fig. 44 is a flowchart showing the AddNotification processing;

Fig. 45 is a flowchart showing the AddInstruction processing;

Fig. 46 is a flowchart showing the GetInstruction processing;

Fig. 47 is a flowchart showing the ExecutionInstruction processing;

Fig. 48 is a flowchart showing the processing performed by a desktop server component;

Fig. 49 is a flowchart showing the processing performed for a request concerning mail;

Fig. 50 is a flowchart showing the processing performed for a request concerning a schedule;

Fig. 51 is a flowchart showing the processing performed for a request concerning another device;

Fig. 52 is a flowchart showing the processing performed for a request concerning logout and help;

Fig. 53 is a flowchart showing the processing performed on an initial menu screen;

Fig. 54 is a flowchart showing the processing performed for public information;

Fig. 55 is a flowchart showing the login processing;

Fig. 56 is a flowchart showing the processing performed to select a job and to perform an action;

Fig. 57 is a flowchart showing the processing performed to preview a selected Job;

Fig. 58 is a flowchart showing the processing performed to delete a selected Job;

Fig. 59 is a flowchart showing the processing performed to change a schedule for a selected Job;

Fig. 60 is a flowchart showing the processing performed to print a selected Job;

Fig. 61 is a flowchart showing the processing performed to change a print setup for a selected Job;

Fig. 62 is a flowchart showing the processing performed to transmit a selected Job;

Fig. 63 is a flowchart showing the processing performed to change a transmission setup for a selected Job;

Fig. 64 is a flowchart showing the processing performed beginning at a main menu;

Fig. 65 is a flowchart showing the search processing;

Fig. 66 is a flowchart showing the processing performed to add information to public information;

Fig. 67 is a flowchart showing the printing processing;

Fig. 68 is a flowchart showing the remote printing processing performed by a printer;

Fig. 69 is a flowchart showing the transmission processing;

Fig. 70 is a diagram showing an example transmission setup menu;

Fig. 71 is a diagram showing an example transmission setup change menu;

Fig. 72 is a flowchart showing the remote sending processing performed by a printer;

Fig. 73 is a diagram showing an example menu for selecting a device wherein a Job to be deleted is located;

Fig. 74 is a diagram illustrating an example list for Jobs to be deleted;

Fig. 75 is a flowchart showing the deletion processing;

Fig. 76 is a flowchart showing the remote deletion processing performed by a printer;

Fig. 77 is a flowchart showing the command setup processing;

Fig. 78 is a flowchart showing the schedule change processing;

Fig. 79 is a flowchart showing the remote rescheduling processing;

Fig. 80 is a flowchart showing the processing performed to access another device;

Fig. 81 is a diagram showing a setup screen for accessing another device;

Fig. 82 is a flowchart showing the desktop processing;

Fig. 83 is a flowchart showing the processing performed for unread mail;

Fig. 84 is a flowchart showing the processing performed for read mail;

Fig. 85 is a diagram showing an example unread mail list;

Fig. 86 is a diagram showing an example display for the content of mail;

Fig. 87 is a diagram showing an example read mail list;

Fig. 88 is a flowchart showing the file processing;

Fig. 89 is a flowchart showing the ResetInstructions processing;

Fig. 90 is a flowchart showing the DeleteAllInstructions processing;

Fig. 91 is a flowchart showing the DeleteInstructions processing;

Fig. 92 is a flowchart showing the GetInstructionDetails processing;

Fig. 93 is a flowchart showing the Check processing;

Fig. 94 is a flowchart showing the GetJobData processing;

Fig. 95 is a flowchart showing the

GetJobAttributes processing;

Fig. 96 is a flowchart showing the GetActionAttributes processing;

Fig. 97 is a flowchart showing the DeleteJob processing;

Fig. 98 is a flowchart showing the GetNotificationList processing;

Fig. 99 is a flowchart showing the SetNotificationCondition processing;

Fig. 100 is a flowchart showing the SetNotificationCondition processing;

Fig. 101 is a flowchart showing the SetNotificationStatus processing;

Fig. 102 is a flowchart showing the ClearHistory processing;

Fig. 103 is a flowchart showing the DeleteAllPublicInfoJobs processing;

Fig. 104 is a flowchart showing the PrintPublicInfo processing;

Fig. 105 is a flowchart showing the SearchData processing;

Fig. 106 is a diagram showing an example screen for an initial menu;

Fig. 107 is a diagram showing a URL print setup screen;

Fig. 108 is a diagram showing a password input screen;

Fig. 109 is a diagram showing a setup screen for the processing performed for a job selected from a print queue;

Fig. 110 is a diagram showing a setup screen for processing public information;

Fig. 111 is a diagram showing an example setup screen for publishing information using another device;

Fig. 112 is a diagram showing a login screen;

Fig. 113 is a diagram showing an example pending job list;

Fig. 114 is a diagram showing a job preview screen example;

Fig. 115 is a diagram showing a screen for confirmation of deletion;

Fig. 116 is a diagram showing a setup screen for changing a schedule;

Fig. 117 is a diagram showing an example print setup menu;

Fig. 118 is a diagram showing a notification setup screen;

Fig. 119 is a diagram showing an example print setup change menu;

Fig. 120 is a diagram showing an example correction menu;

Fig. 121 is a diagram showing an example main menu;

Fig. 122 is a diagram showing an example menu for

designating a position whereat a job to be printed is located;

Fig. 123 is a diagram showing an example menu for selecting a job to be printed;

Fig. 124 is a diagram showing an example menu for designating a position whereat a job to be transmitted is located;

Fig. 125 is a diagram showing an example menu for selecting a job to be transmitted;

Fig. 126 is a diagram showing an example command setup screen;

Fig. 127 is a diagram showing an example menu for designating a device whereat a Job to be changed is located;

Fig. 128 is a diagram showing an example screen for selecting a Job for which a schedule is to be changed;

Fig. 129 is a diagram showing an example desktop main menu;

Fig. 130 is a diagram showing an example setup screen for obtaining a file;

Fig. 131 is a diagram showing an example desktop file list;

Fig. 132 is a diagram showing an example screen for selecting the processing to be performed for an obtained file;

Fig. 133 is a diagram showing a setup screen for

establishing limitations for a job;

Fig. 134 is a diagram showing a setup screen for setting a rejection for a job;

Fig. 135 is a diagram for explaining the structure of a job;

Fig. 136 is a diagram showing the functional arrangement of the embodiment;

Figs. 137A and 137B are flowcharts showing automatic process setup screen processing;

Fig. 138 is a diagram showing an example automatic process setup screen;

Figs. 139A and 139B are flowcharts showing the automatic reception setup screen processing;

Fig. 140 is a diagram showing an example automatic reception setup screen;

Fig. 141 is a diagram showing another example automatic reception setup screen;

Fig. 142 is a flowchart showing the action setup screen processing;

Fig. 143 is a diagram showing an example action setup screen;

Figs. 144A and 144B are flowcharts showing the automatic state change setup processing; and

Fig. 145 is a diagram showing an example automatic state change setup screen.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The preferred embodiment of the present invention will now be described in detail while referring to the accompanying drawings.

Fig. 1 is a diagram showing the functional arrangement of the embodiment. A client component 102 and a server 103 may be present in the same device, or may be in different devices connected across a network, etc.

When a user 101 specifically operates the client component 102, the client component 102 transmits to the server 103 a request that corresponds to the operation. The server 103 interprets the received request, and adds or deletes a job to or from a database 104, or acquires data from the database 104. As a result, a response is prepared in HTML (Hyper Text Markup Language), as needed, and is transmitted to the client component 102. The client component 102 displays the received HTML data and allows the user 101 to perform additional device manipulations.

A daemon module 105 monitors the job stored in the database 104, and performs the processing (printing, transmission or notification) that corresponds to the job for which the execution condition is satisfied.

Fig. 2 is a detailed diagram showing the functional arrangement of the embodiment.

The client component 102 is constituted by an

operating unit 201 and two Web browsers 202 and 203. The user manipulates the operating unit 201, and an instruction for starting the processing is converted into a request by the Web browser 202, while an instruction for displaying the status of a device (printer 206) is converted into a request by the Web browser 203. These requests are transmitted to the server component 103.

The server component 103 is constituted by a Web server 204, a device manager 205, a request manager 207, and a command analysis/process unit 208. A request originating at the client component 102 is received by the Web server 204, which in turn transmits the request to the device manager 205 or to the request manager 207.

In accordance with the request, the device manager 205 either acquires the status of the printer 206 or exercises control of the printer 206. The request manager 207 converts the request into a process command, and transmits it to the command analysis/process unit 208.

The command analysis/process unit 208 performs the processing corresponding to the process command, and accesses the database 104 via a database manager 209 to add or to update a job.

The daemon module 105 accesses the database 104 via the database manager 209 at a constant time

interval, and determines whether there is a job for which the execution condition is satisfied. If there is such a job, the daemon module 105 executes a corresponding process.

Fig. 3 is a diagram showing the transmission of information in accordance with the operations performed by a user.

The client component 102 receives as input information the data produced by the operations performed by the user, and generates a request and transmits it to the server component 103.

The server component 103 interprets the received request, and communicates with the database 104 via the database manager 209 to add or to update a job, or to acquire data. In addition, the server component 103 communicates with the printer 206 to obtain the status of the printer 209. As a result, the server component 103 generates, as needed, a corresponding display command (an HTML page) and transmits it to the client component 102.

The client component 102 displays the received display command (an HTML page) for the user, and allows the user to perform a new operation.

Jobs stored in the database 104 are monitored by the daemon module 105 via the database manager 209, and a job for which the execution condition is satisfied is printed or transmitted, or brought to the attention of

the user.

Fig. 4 is a detailed diagram showing the sequence of the processing performed until a command corresponding to the user's entry is executed.

The manipulation of data input devices by the user is converted into corresponding operation instruction data by the operating unit 201. For example, the manipulation by the user of a keyboard or of a mouse is converted into corresponding key code or into information, such as mouse movement information, that can be handled by an information processing apparatus.

The operating instruction data converted by the operating unit 201 are converted into a corresponding request by the Web browser 202, and the request is transmitted to the Web server 204. When, for example, one of the buttons on a screen is selected, a request "selection of a specific button" is prepared.

The Web server 204 transmits the received request to the request manager 207, which thereafter converts the request into a corresponding process command and transmits it to the command analysis/process unit 208. When, for example, the user chooses a button to instruct printing, a request "selection of a print button" is converted into a print command "execution of a process corresponding to the print button", and printing is performed.

Fig. 5 is a diagram showing the sequence of the

processing performed until the results of the processing and the change in the status of the printer 206 are displayed for a user.

The request manager 207 receives the process result from the command analysis/process unit 208, and transmits corresponding operating instruction data to the Web server 204. Similarly, the device manager 205 detects the change of the status of the printer 206 and transmits corresponding operating instruction data to the Web server 204. To display, for example, a new operating screen as the processing result, the contents to be displayed are converted into HTML data for the new operating screen. Also, to display a new screen for the status of the printer 206, the contents to be displayed are converted into HTML data for the screen.

The Web server 204 transmits the received operating screen data to the Web browsers 202 and 203. The Web browser 202 provides the data for a user by displaying the data on a display operating unit, such as a touch panel. The Web browser 203 displays the status of the printer 206.

Fig. 6 is a diagram showing the functional relationship among a plurality of devices (device A and device B in this embodiment). In this embodiment, device A is a printer, and device B is a desktop personal computer for managing both a user's mail and a schedule. The devices A and B each include a client

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component 102, a server component 103 and a daemon module 105. It should be noted, however, that the user is located on the same side as is the device A, and the client component 102 of the device B is not shown.

When the user manipulates the device A, the operating unit 201 acquires as input information the information input by the user's manipulation of the device, and transmits it as a request to the device manager 205 and the request manager 207 in the server component 103.

The device manager 205 responds to the user's request by acquiring the status of the printer 206. In accordance with the type of the request, the request manager 207 permits a printer control unit 601 to control the printer 206, or permits the command analysis/process unit 208 to analyze more detailed information and to perform a corresponding process.

As a result, the information form is changed by a conversion control unit 603, as needed, or various processes are performed by a controller 602. When it is determined that management of the job is required, the addition of a job or the updating of a job is performed for the database 104. When it is determined that the display of data is required, the data are displayed by a display control unit 604. When it is determined that the issuance of a data notification is required, the data notification is issued by a

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notification control unit 605.

The daemon module 105 periodically monitors the database 104. When there is a job for which the execution condition is satisfied, the daemon module 105 executes the corresponding processing.

When it is determined that the processing has not been completed by the device A, a request is issued to the device B, and the request manager 207 of the device B performs the corresponding process. To print a file at the device B, for example, a printing unit 607 employs a corresponding application, and for accessing mail, a mail control unit 608 employs a corresponding application. For other operations, such referencing schedule information, a corresponding application is employed.

In addition, a job stored in the database 104 of the device B can also be accessed.

Fig. 7 is a diagram showing the configuration of a system according to this embodiment.

In Fig. 7, various apparatuses are connected to a network 701, and data are exchanged across the network 701. A printer 702, which includes an input/output operation unit 703, prints data received across the network 701. The input/output operating unit 703 provides various displays for a user, and accepts instructions from the user. A scanner 704 and a multi-function apparatus 705 also include such an

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input/output operating unit. The scanner 704 optically reads data printed on paper, etc., and the multi-function apparatus 705 functions as the printer 702 and as the scanner 704. A personal computer 706 creates documents and images, and manages for the user such personal data as mail and a schedule.

Fig. 136 is a diagram showing the functional arrangement for the embodiment.

Features of this arrangement are that a process instruction command (job) is employed as one process unit, and that a job generation unit 1362, an analysis/performance unit 1363 and an output unit 1364 are operated at adequate timings.

A detailed explanation will now be given for a job. Fig. 135 is a diagram for explaining the structure of a job.

A job includes a process (Action), a process performance condition (Condition), a process performance instructor = owner (Owner), a current process status (Status), and information concerning a process creation time (Created Time) and the job that triggered the creation (Parent Job). With the job, the previously performed process can be refereed to and the performance of a new process can be instructed.

The above process performance conditions (Condition) are When To Do (initiation when a designated time has been reached), After Time

(initiation after a designated time has elapsed), Before Time (initiation before a designated time has elapsed), On Action (initiation upon the performance of a designated process), Object (initiation at the time for a designated object), From (initiation at the time for a designated process source), By (initiation when a designated method is employed for a process), Device Status (initiation when the status of a device attains a designated value), and Result Status (initiation in accordance with the process results obtained).

The values for the Device Status are OK, Toner low, Staples low, Unknown, Printing, No toner cart, Printer open, Paper jam, Hardware failure, Tray failure, Paper deck open, and Stapler low.

The values for the Result Status are Success, Fail, and Hold job accessed.

The Owner represents the issuer of process execution instructions, i.e., the owner of the processes, and includes User Device ID, User ID, Password, and User Type. The types of users are Sender, Receiver, Other, Receiver to be, and Don't care.

The values for the process status (Status) are Done (execution terminated), To Do (execution scheduled), Don't care (invalid), Cancel (deleted), Active (in progress), Spooling (spooling in progress), Failed (execution failure) and Ignored (execution

ignored).

The Action includes the types of processes that were performed or are to be performed (Type), the object to be processed (Object), Object Count (the number of copies of the object), To (process destination), From (process source), By (process method), and all other process associated information.

The types of processes (Type) are None, Get, Send, Delete, Scan, Extract data, Print, File, Set instruction, Hold, Extend hold, Pause printing, Change priority, Receive, Convert, Notify, and Operate.

As the Object, there are Action and Object. To (process destination) and From (process source) include the Sender or the Receiver, as a Person, and a Device. By (process method) includes Popup window, Voice message, E-mail, Fax, Phone, and Pager.

The Object includes the substance of an object (Content), management information such as the data format (Format) and the size (Size) of the object, additional information (Addition) concerning the object, such as a comment, and source information (Source) for the object. For a file having a print format, the original MS-Word file is employed as source information.

The data formats (Format) of the object are Text, Html, Rtf, Bmp, Tiff, Pcx, Jpeg, G3, G4, Pcl5, and MS-Word.

09705556 - 101498

Referring again to Fig. 136, the job generation unit 1362, the analysis/performance unit 1363 and the output unit 1364 are installed in a control box 1361, which is connected to a conventional printer 206. The printer 206, as in the prior art, receives external print information, performs the printing process in accordance with an instruction, and outputs the print results.

First, an explanation will be given for the time that an instruction is entered by a user. When the user enters a specified instruction via an operating unit 101, the job generation unit 1362 generates a job corresponding to the instruction, and adds the job to the database 104.

The job added to the database 104 is monitored by the analysis/performance unit 1363, and whether the execution condition has been satisfied is sequentially examined. If there is a job for which the execution condition has been satisfied, a corresponding process is performed, and the database 104 is updated using the job that reflects the execution result.

When, for example, the user instructs the printing of specific data at a designated time, the job generation unit 1362 generates as a job the contents of the operation input by the user, and adds the job to the database 104.

At this time, if the database 104 includes a job

"analyze the contents of an operation entered by a user and re-register this job", which designates a process to be performed when the operation input by the user takes place, the analysis/performance unit 1363 for detecting the presence of an unanalyzed job in the database 104 analyzes the contents of the operation entered by the user, determines a corresponding process to be performed and generates it as a job, and adds the job to the database 104.

In this case, the printing process is added as a job to the database 104. Also, the job that represents the contents of the operation input by the user is regarded as having already been analyzed and updated, and the above mentioned job for analyzing the user's operation is re-registered.

When the time designated by the user is reached, the job for the printing process is performed, and print information 107 is generated and transmitted to the printer 206. When new job print results are obtained, the job "reflect the print results in this job" is added to the database 104. The printer 206, as in the prior art, performs the instructed, and outputs the print results. In addition, after the printing has been completed, the print results are obtained as the printer status from the printer 206, and are reflected in the job.

When in this embodiment the paper or the toner has

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run out, or an error has occurred at the printer 206, job generation unit 1362 obtains the change in the printer status for the printer 206, and generates a corresponding job and adds it to the database 104. When it is ascertained from the printer status for the printer 206 that the toner has run out, the occurrence of the change in the printer status is created as a job and is added to the database 104.

At this time, if the database 104 includes the job "issue an order request when toner has run out, and re-register this job", which designates a process to be performed upon the occurrence of a change in the status, an order request is issued and the job is re-registered. As a result, each time a like condition occurs, this process is performed.

The process performed for the change in the status of the printer 206 is also performed for changes in the internal statuses of the other sections.

As an example, there is one case where the backlight for a liquid crystal display panel 801, which will be described later, is powered off. When the database 104 includes the job "perform initialization process when the backlight is powered off, and re-register this job", which designates a process to be performed upon the occurrence of the change in the status, the initialization process is performed and the job is re-registered. As a result, the periodical

initialization process that is required for stably activating a product can be performed in consonance with a timing that is satisfactory under the circumstances.

When the job generation unit 1362 is notified of a change in the external status, it generates a corresponding job and adds it to the database 104.

When, for example, an error has occurred in an external printer connected across a network, the occurrence of the change in the external status is generated as a job and is added to the database 104. At this time, if the database 104 includes the job "transmit a job transmission instruction when an error has occurred in an external printer, and re-register this job", which designates a process to be performed upon the occurrence of a change in the external status, a job transmission instruction is transmitted by the output unit 1364 to the printer at which the error occurred, and this job is re-registered in the database 104. As a result, each time a like condition occurs, the same process is performed.

When a process instruction (job) is received from an external device, the job generation unit 1362 generates a corresponding job and adds it to the database 104.

For example, upon receiving a job transmission instruction, the reception of the job transmission

instruction is generated as a job and is added to the database 104.

At this time, if the database 104 includes the job "add a received job and re-register it", which designates a process to be performed upon receiving the job, the job transmission instruction is added and the job is re-registered.

Sequentially, when the execution condition of the job transmission instruction is matched, a transmission process corresponding to the job is performed and the job is transmitted.

Next, an explanation will be given for a case wherein a job transmission instruction other than the above, i.e., a print information transmission instruction, is received.

To print information stored in another information output apparatus, the corresponding print information must be extracted from the above print information. Transmission of the print information by the pertinent apparatus is one method that is employed. With this method, however, a printing function for the information is required by an information requesting apparatus. In this embodiment, an explanation will be given for another method for the transmission of print information that corresponds to the information stored in a specific apparatus.

When a print information transmission instruction

106 is received from a specific device, the receipt of the job is generated as a job and added to the database 104. Then, when the execution condition of the job is matched, a print information transmission process that corresponds to the job is performed. In the print information transmission process, print information is prepared from the requested information and is transmitted as instructed.

In the information output apparatus that has received the print information, the job generation unit 1362 generates as a job the acquisition of print information, and adds it to the database 104.

At this time, as is described above, since when the print information transmission instruction was issued the job "execute a printing process upon receiving from a transmission source print information for a print information transmission instruction" was added to the database 104, with the assumption that print information had been received, the printing process is performed, and the received print information is transmitted to the printer 206, which then initiates the printing and outputs the printing results.

In addition to the above described process instruction, there are instructions for notification and for output. These process instructions may be externally received or may be stored in the database

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104 in advance.

For example, when the execution condition of the notification instruction is matched, the notification process is performed using E-mail, a telephone, or a facsimile machine. When the execution condition of the output instruction is matched, the output process is performed, and a display is provided or a voice is released.

Fig. 8 is a diagram showing the essential hardware arrangement according to the embodiment. Switches, a fan, etc., are not shown.

An information output apparatus according to the embodiment of the present invention includes input devices, such as a microphone 809, a touch panel 801, a keyboard/mouse 810, an IrDA transmission/reception unit 811, a network 804 and a modem 812, and acquires information through an input unit 803.

The touch panel 801 is used to display for the user the printer status and a menu screen. And when the user touches the display screen, a menu item can be selected and characters can be entered using a keyboard that is displayed. A common display and a common keyboard may be used instead of the touch panel 801.

The status of the printer 206 is also obtained via a centrocable from the input unit 803. Besides the status of the printer 206, the internal status is detected and obtained by an internal sensor or a

monitor.

The processing results are output by an output unit 813 to certain output devices, such as the printer 206, a display 814, a loudspeaker 815, an LED 816, the IRDA transmission/reception unit 811, the network 804, and the modem 812. When the printing process is performed, for example, the print information is transmitted via the centrocable to the printer 206. The printer 206 performs the printing in accordance with the received print information, and outputs the printing results. It should be noted that the input unit 803 and the output unit 813 are not necessarily physically separate components.

A CPU 802 executes various programs, including the processing which will be described later while referring to the flowcharts, and controls the individual sections connected by a system bus 808. Further, by executing corresponding programs, the CPU 802 provides the functions for the job generation unit 1362, the analysis/performance unit 1363, and the output unit 1364 that are described above.

A ROM 805 is used to store fixed data and programs. A RAM 806 is used to temporarily store data and programs. A hard disk drive (HDD) 807 is used for the above described database 104 as permanent storage for programs and data. The system bus 808 is employed as a medium for the connection of the above individual

sections and for the exchange of data, address signals and control signals by the sections.

The programs, including the processing which will be described later while referring to the flowcharts, may be stored in the ROM 805, or may be loaded from the HDD 807 into the RAM 806, as needed, before the initiation of the processing or during the performance of the processing. An external storage device, such as an MO drive, may be employed instead of the HDD 807.

With the above described arrangement, the job generation unit 1362 generates a job that corresponds to the input information and adds it to the database 104 on the hard disk 807; the analysis/performance unit 1363 obtains a job from the database 104 and performs a corresponding process; and the output unit 1364 outputs the processing results.

Fig. 9 is a flowchart showing an activation order when a user powers on a machine. When at step S901 the user turns on the power, at step S902 the OS is activated, and at step S903 the Web server 103 is activated. Then, at step S904 the client component 102 is activated, and finally at step S905 the daemon module 105 is activated.

Fig. 10 is a flowchart showing the processing performed by the client component 102.

When the client component 102 is activated, at step S1001 a Web browser object is created, and at step

S1002, a request to prepare an HTML page is issued to the server component 103. The page at this time is an opening screen. At step S1003 the HTML page transmitted by the server 103 as a response is displayed, and at step S1004 input by the user is waited for. Then, a process corresponding to the user's input is performed. When at step S1005 a request from the user is "exit", at step S1006 the system is shut down, and the processing is thereafter terminated. When at step S1007 the request from the user should be processed by the client component 102, at step S1009 this process is handled and input by the user is again waited for. When the process should be performed by the server 103, at step S1008 a process request is issued to the server component 103, and an HTML page prepared as a consequence of the request is received and displayed. Then, input by the user is again waited for.

Fig. 11 is a flowchart showing the processing performed by the server component 103 upon receiving a request from the client component 102.

The server component 103 receives a request from the client component 102 at step S1101, and analyzes this request at steps S1102 to S1103 and performs a corresponding process. As for a request for the display of an OpeningScreen page, at step S1104 the printer status is obtained. As for a Cancel All Jobs

request, at step S1105 the CancelAllPrinterJobs( ) function, which will be described later while referring to Fig. 12, is called, and all the jobs are canceled. As for the Cancel/Pause/Restart request, at step S1106 the SetPrinterJobsStatus( ) function is called, and a designated status is set for the job.

For all these requests, at step S1107 a corresponding HTML page is finally prepared, and at step S1108 the HTML page is transmitted to the client component 102. The processing is thereafter terminated.

The processing performed for the request "login" or "logout" will be described later while referring to Fig. 15, and the processing performed for the request "GotoOtherDevice" or "GotoDesktop" will be described later while referring to Fig. 16. Further, the processing performed for the request "Search", "Help" or "Receive Job/Receive Notification" will be described later while referring to Fig. 17, and the processing performed for the request "Print", "Send", "Delete", "Reschedule" or "Preview" will be described later while referring to Fig. 22.

Fig. 12 is a flowchart showing the CancelAllPrinterJobs processing. The prototype is DWORD CancelAllPrinterjobs( ).

First, at step S1201 the GetAllPrinterJobs function, which will be described later while referring

to Fig. 13, is called, and jobs are obtained from the spool. At step S1202 a specific printer is opened, and at step S1203 the statuses of the individual jobs that are to be canceled are set to "Cancel". Then, at step S1204 the printer is closed. This process is repeated until the statuses of all the jobs have been set to "Cancel".

Fig. 13 is a flowchart showing the GetAllPrinterjobs processing. The prototype is Int GetAllPrinterjobs(pInfo).

First, at step S1301 the EnumPrinter( ) function is employed to list a printer, a print server, a domain and a print provider that are available. At step S1302 one of the listed objects is opened, and at step S1303 a job available in the spool is listed by using the EnumJob( ) function. At step S1304 the printer is closed. This process is performed for all the objects.

Fig. 14 is a flowchart showing the SetPrinterJobStatus processing. The prototype is Int SetPrinterJobStatus(pPrinterName, JobId, Status).

First, at step S1401 the GetJob function is employed to extract a designated job from the spool. At step S1402 a specific printer whereat the job is present is opened, and at step S1403 the status of the job is set to a designated value. At step S1404 the printer is closed, and the processing is thereafter terminated.

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Fig. 15 is a flowchart showing the processing performed by the server 103 when the request from the client component 102 is "Login" or "Logout".

When at step S1501 the request is "Login", first, at step S1502 a login verb and a remote device list are obtained, and at step S1503 the name of a user is acquired. At step S1504 the GetUserId( ) function is called to obtain a job list for the user. At step S1505 a corresponding HTML page is prepared, and at step S1506 detailed information for the user and the job are stored in a hidden domain on the HTML page.

When the request from the client component 102 is "Logout", at step S1507 a check is performed to determine whether the remote device list is empty. When the list is empty, at step S1510 the OpeningScreen page is created in accordance with the existing status. When the remote device list is not empty, at step S1508 the next device is logged-in using the login verb "Disconnect", and at step S1509 the device is deleted from the remote device list. The processes at steps S1508 and S1509 are repeated until the list is emptied. That is, until all the devices in the remote device list are logged out. When the list has been emptied, the OpeningScreen page is prepared.

For both of the requests "Login" and "Logout", at step S1511 the obtained page is finally transmitted to the client component 102, and the processing is

thereafter terminated.

Fig. 16 is a flowchart performed by the server when the request from the client component 102 is "GotoOtherDevice" or "GotoDesktop".

When at step S1601 the request is "GotoOtherDevice", at step S1602 a device name and a device address are acquired. For the GotoDesktop request, at step S1603 a desktop address is acquired. Then, at step S1604 the pertinent device is added to the remote device list, and at step S1605 a login verb is composed. When at step S1606 the type of the login verb is Device or Desktop, Print, Send, Delete or Reschedule, at step S1607 the device is logged in using the corresponding login verb. When the login verb is Device or Desktop, at step S1608 the HTML page for the opening screen is prepared. When the login verb is Print, Send, Delete or Reschedule, at steps S1609, S1610, S1611 and S1612, respectively, HTML pages are prepared for the Print Job screen, the Delete Job screen, and the Reschedule Job screen. When the login verb is Disconnect, at step S1613 the processing for the device is logged out, and at step S1614 the pertinent device is deleted from the remote device list. At step S1615 the HTML page for the opening screen is prepared. And, finally, at step S1616 the HTML page is transmitted to the client component 102. The processing is thereafter terminated.

Fig. 17 is a flowchart showing the processing performed by the server 103 when the request from the client component 102 is "Search", "Help" or "Receive Job/Receive Notification".

When at step S1701 the request is "Search", at step S1702 a search parameter is acquired and at step S1703 a search is performed. At step S1704 an HTML page is prepared in accordance with the search results. For the Help request, at step S1705 a help context parameter is acquired, and at step S1706 a corresponding HTML page for a help screen is prepared. Finally, for both requests, at step S1707 the HTML page that is created is transmitted to the client component 102, and the processing is thereafter terminated.

When the request type is "Receive Job/Receive Notification", at step S1708 a data buffer is read. For the Receive Job request, at step S1709 the contents of the buffer are transmitted for the IDAnalyze processing, which will be described while referring to Fig. 18. For the Receive Notification request, at step S1709 the contents of the buffer are transmitted for the IDAnalyzeNotify processing, which will be described while referring to Fig. 20. The processing is thereafter terminated.

Fig. 18 is a flowchart showing the IdAnalyze processing. During this processing, a job received as row data from another device is interpreted. This job

is added to the database 104 and is executed by the daemon module 105.

At step S1801 the Demarshal function is called to perform the demarshal calculation, and an available buffer object is obtained. At step S1802 the UnformatData function is employed to decode and develop compressed data, and the data can be validated as units of rows. At step S1803 the Demarshal function is called again, and an available message object is obtained. Finally at step S1804 the ReceiveJob function (DUMMY), which will be described while referring to Fig. 19, is called, and the job is added to the database 104.

Fig. 19 is a flowchart showing the DUMMY processing. This module is transmitted to a CGI application, which is a dummy for an ISAPI expansion "Receive" module that receives a row buffer transmitted by SendJob.

Actually, at step S1901 the ReceiveJob function is read from the row buffer received from SendJob, and at step S1902 the buffer is dumped into a temporary file. At step S1903 the name of this file is transmitted to IDExtn.Exe of the CGI module. At step S1904 the name of the file is read and data are obtained. At step S1905 this module employs the Internet client call to send data to the CGI application.

Fig. 20 is a flowchart for the IdAnalyzeNotify

processing. During this processing, a notification that is received as row data from another device of the same type is interpreted. The notification module is added to the processing, and the contents of the notification are performed by the daemon module 105.

Specifically, at step S2001 the Demarshal function is called, and the demarshal calculation is performed to obtain an available buffer object. Then, at step S2002 the UnformatData function is employed to decode and develop compressed data, and the available data are obtained as units of rows. At step S2003 the Demarshal function is called again, and an available message object is obtained. Finally, at step S2004 the ReceiveHttpNotification function, which will be described while referring to Fig. 21, is called and the job is added to the database 104.

Fig. 21 is a flowchart showing the ReceiveHttpNotification processing. The prototype is Void CIDAction::ReceiveHttpNotification(poNotify).

This function is one used for receiving a notification transmitted according to the HTTP protocol. Even if the device does not support a requested notification method, the notification can be transmitted to the destination device via an intermediate device.

At step S2101 the name and the address of a notification receiver, and a notification method are

obtained. At step S2102 a check is performed to determine whether the device is a destination device for receiving the notification, or an intermediate device for relaying the notification to another device.

If the device is the final destination, at step S2103 a temporary file is created, and at step S2104 the notification message is written to the file. At step S2105 a fixed file "pollfile" (a file polled by the daemon module 105) in the Windows directory is created and overwritten. At step S2106 a command line parameter for a notification module (a module for displaying or creating a message) is designated in the file. And at step S2107 the parameter is transmitted by a designated notification method.

If the device is an intermediate device, at step S2108 a check is performed to determine whether the device has a function for issuing a notification. If the device can issue a notification, at step S2110 the device transmits a notification to a designated device using a designated notification method. If the intermediate device does not have a function for issuing a notification, at step S2112 a notification in accordance with HTTP protocol is transmitted to another intermediate device.

Fig. 22 is a flowchart showing the processing performed by the server 103 when a request from the client component 102 is "Print", "Send", "Delete",

"Reschedule" or "Preview".

Upon receiving one of these five requests, first, at step S2201 the user ID, the Job ID and the Action ID are obtained.

When at step S2202 the request is "Print", at step S2203 the time and a place for printing are obtained, and at step S2204 a notification list is acquired. At step S2205 the PrintJob( ) function is called to perform printing.

For the Send request, at step S2206 the time and a place for transmission are obtained, and at step S2207 a notification list is acquired. At step S2208 the SendJob( ) function is called to perform transmission.

For the Delete request, at step S2209 the CancelAction( ) function is called to delete a job.

For the Reschedule request, at step S2210 the RescheduleAction( ) function is called to change a schedule.

For the Preview request, at step S2211 the format conversion library is employed to convert the job into a JPG or GIF format.

For all these requests, at step S2212 a corresponding HTML page is prepared, and at step S2213 the HTML page is transmitted to the client component 102. The processing is thereafter terminated.

Fig. 23 is a flowchart showing the PrintJob processing. The prototype is Void

CIDAction::PrintJob(ActionId, NotifyList). Input parameters are the ID for a designated action, and a notification setup list for a user. The job is immediately printed by the device A.

When the action ID is Print/Hold, the attributes of the action (the printing time, a notification, etc.) are corrected to a current time and a new notification. When the action ID is Send, a new action is created in the database 104. This depends on whether there is another PrintAction that relates to the job that the user is holding. When the job is printed, the action status is "Done", and this action is one part of the user's history.

At step S2301 a record related to a designated action is obtained to examine the action in detail. At step S2302 a check is performed to determine whether the previous action type is "Hold", and at step S2303 the information is stored. At step S2304 job data required for this action are obtained, and at step S2305 the entry in the database 104 is revised to "Printing" because the daemon module 105 is inhibited from performing the action in this record.

At step S2307 or S2308, a new record is prepared, or the current record is revised. If at step S2306 the previous action was Print/Hold, its record is revised. If the previous action was Send, and if there is no PrintAction for its job that the user is holding, a new

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record is prepared. Then, the new/old action ID is returned (in accordance with the condition).

At step S2309 the notification status is unconditionally changed to False. At step S2310 the notification is added to the new action, and the user type is set to "Don't care" (i.e., neither a sender nor a recipient exists).

At step S2311 the job is transmitted to a print queue to perform printing using Spooler API Calls. At step S2312 the entry is revised to "Printing successful" or "Printing failure". At step S2313 the notification status is set in accordance with the printing status.

Fig. 24 is a flowchart showing the SendJob processing. The prototype is Void CIDAction::SendJob(bsendjobToDatabase, ActionId, roJobMessage).

A designated "Present" job or a new job is transmitted to a designated receiver device list. For each transmission, a copy is obtained for each device. When there are a plurality of receivers, one the copy of the job is used by them in common. Since information for all the other devices is also transmitted, a specific device can access the job. The HTML protocol is employed for the transmission of the job.

Specifically, at step S2401 a check is performed

to determine whether the job is a job wherein the action ID is present, or a new job. When the action ID is present in the job, at step S2402 the attribute of the action is obtained, and at step S2403 a check is performed to determine whether the action type is Hold. When the action type is Hold Job, at step S2404 information is stored indicating that the Hold Job was accessed.

If at step S2405 storage of the information in the database 104 is designated, at step S2406 the SendJob( ) function is called, and all the information (a sender, a receiver, etc.) concerning the job is stored in the database 104. At step S2407 the time is examined to determine whether the job is to be transmitted immediately. If the job need not be transmitted immediately, the processing is terminated and the transmission by the daemon module 105 is waited for. When the job is to be transmitted immediately, at step S2408 the job is transmitted, and the processing is thereafter terminated.

Fig. 25 is a flowchart showing the transmission processing performed using the SendJob( ) function.

First, the EditAction( ) function is called to set the action status to "Active". Then, the receiver list is processed to obtain the user's name, the device name, and the URL address of the device. A format conversion is performed using an appropriate image

conversion library that corresponds to the receiver device. Message data are converted into a byte string, which is then compressed and encoded. The obtained data are transmitted using the HTML protocol, and the action status is set to "Done". Furthermore, the action is included in the database 104 as one part of the user's history, and in accordance with the transmission state, the notification status is set to "Success" or "Fail". The status indicating that the job is one in the HeldList that was accessed is set (steps S2501 to S2511).

Fig. 26 is a flowchart showing the CancelJob processing. The prototype is Void CIDAction::CancelJob(dwActionId).

This function is employed to cancel a designated action. Specifically, at step S2601 the attribute of the action is obtained, and the CancelAction( ) function is called to set the action to "Cancel". If at step S2602 the action is included in the Hold list, at step S2603 it is included as a part of the user's history. When the action is already a part of the user's history, at step S2604 the entry is deleted. When at step S2605 the action type is Hold, at step S2606 the notification condition is set to "Accessing the Hold Job". When at step S2607 the user is a receiver for this device, the processing is thereafter terminated. When the user is present for another device, at step

S2608 that device is logged in. At step S2609 the details of the action to be canceled are set, and at step S2610 the SendJob( ) function is called to transmit this information to the actual device. As a result, a cancellation of the action is effected.

Fig. 27 is a flowchart showing the SendNotification processing. The prototype is Void CIDAction::SendNotification(dwActionId).

This function is used to effect an actual notification. The transmission of the notification type, such as Popup, is performed using the HTTP protocol. The notification of a call or mail is performed by calling a proper module. When a method that is not supported is designated, a notification is transmitted to a designated intermediate device, which then re-transmits it. This function is employed only when the notification should be transmitted "Now". In this case, the notification status is set to "Done" to prevent the daemon module 105 from polling it.

Specifically, first, at step S2701 a notification means is examined. If at step S2702 the notification means is a popup window or a voice message, at step S2703 data are transmitted using the HTTP protocol. If the notification means is a telephone, at step S2705 a check is performed to determine whether the device possesses a notification capability. If the device possesses such a capability, at step S2704 the

notification is sent using the designated method. When the device does not possess the notification capability, at step S2706 an intermediate device is obtained. The intermediate device supports a designated mechanism for issuing a notification. At step S2707 the notification message and its details are transmitted to the intermediate device using the HTTP protocol. This method can be employed for mail, for a facsimile, and for a pager.

Fig. 28 is a diagram showing the relationship between input information for the server 103 and corresponding processes.

The control unit 602 handles the processes for Print Job, Send Job, Cancel Job, and Send Notification and Receive HTTP Notification. This module is a main module for the back end of the printer 206, and performs the operations "Print a job here now", "Print a job here later", "Print a job at a different place now", "Print a job at a different place later", "Transmit a job to another device now, or later", "Change a schedule", "Cancel the action of a job", "Set a notification type (voice, popup window, telephone, E-mail or Fax)", "Receive a notification", and "Obtain or set the status for a device".

This module covers the database module 104 so that the database 104 and calls for it are transparent to a module (a GUI module or a daemon module) that employs

EP 0 794 656 A2

the database 104.

Fig. 29 is a flowchart showing the processing beginning with the activation of the daemon module 105.

The daemon module 105 constantly polls the database 104 and the files to perform an action or an operation has been registered for execution later. The entries for these actions are prepared in the database 104.

First, at step S2901 threads for performing polling using an infinite loop are generated, and a job to be executed "Now" is polled. When a job (action) is found in the database 104, its action type is examined (steps S2902 to S2905).

When the action type is Print, at step S2906 the PrintJob( ) function is called and printing is performed. When the action type is Send, at step S2908 the ConstructSendMessage( ) function is called and a message is prepared. Then, at step S2909 the SendJob( ) function is called and transmission of the message is performed.

When the action type is Hold, at step S2907 the CancelJob( ) function is called and the job is canceled.

At step S2910 the notification message is processed.

Fig. 30 is a flowchart showing the notification processing performed by the daemon module 105.

At step S3001 the PollNotify( ) function is called

to determine whether a notification message to be issued by the device is present. If such a notification message is present, at step S3002 the SendNotification( ) function is called and the notification message is issued. If a notification message to be issued is not present, at step S3003 a check is performed to determine whether an application file is present.

When at step S3004 an application file is present, at step S3005 a command line parameter is read from the file and the file is deleted. The ShowNotify.Exe module is started through which the command line parameter is passed.

When at step S3006 the module type is PullPrint, at step S3007 the PrintOcx.Exe file is started. When the module type is Schedule, at step S3008 the DataDump.Exe is started.

Fig. 31 is a diagram showing the relationship between the job types handled by the daemon module 105 and corresponding processes.

Fig. 32 is a flowchart showing the PrintPrinterJob processing. The prototype is IntPrintPrinterJob(pPrinterName, pDocumentName, pVoid, Bufsize).

This function is used for to notify the printer that a job is spooled. Specifically, a designated printer is opened, and notification that a job is

spooled is issued to the printer. Data are written to the printer, and then the printer is closed (steps S3201 to S3204).

Fig. 33 is a flowchart showing the SendJob processing.

At step S3301 a check is performed to determine whether a job to be transmitted is a new one or one already present in the database 104. When the job is a new one, at step S3303 the details concerning the job are added to the database 104. At step S3311 the sender and receiver of the job are also examined. When these are present in the database 104, at step S3312 a new action is added to the user's ID, and at step S3313 new entries are added to the database 104 for data that are not present in the database 104.

As for the transmission of an already existing job, the action type of the sender is examined. When the action type is Send and the status is Todo or Active, the Whentodo time for the action is changed to a new time that is designated in the job message. When the action type is Send and the action has already been performed, a new action is added to the database 104. When the action type is not Send, the action entered for the job is created in the database 104.

In all the cases, at step S3311 a check is performed to determine whether the receiver of the job is present. When the receiver is not present in the

database 104, at step S3313 a new entry is created. When the action type is Hold (S3304) and the action status is Todo (S3306), at step S3307 the action type is changed to Send, and at step S3308 the Whentodo time is changed to a new time designated in the JobMessage. When at step S3306 the action status is not Todo, at step S3309 a new record for the action type Send is created, and at step S3310 the WhenTodoTime is changed to a new time designated in the JobMessage.

Fig. 34 is a flowchart showing the ReceivejobData processing.

First, at step S3400 the check item "Deny Jobs From Person/Device" is examined. When a job is transmitted from a transmission source set in that item, at step S3417 acceptance of the job is rejected. This item is set by a manager.

Fig. 134 is a diagram showing a setup screen for the setting up the rejection of a job. In Fig. 134, the identifier for a user from whom jobs are to be rejected is set for "Deny Jobs From Person" and a device from which jobs are to be rejected is set for "Deny Jobs From Device". Then, while referring to Fig. 77, the job is rejected as will be described later in the setup for a command.

The effective period and the types of processes to be rejected may be set. The thus determined check items are examined to determine whether or not the

reception of a job from a transmission source user or device is permitted. When the reception of a job is permitted, the reception process is performed.

The job to be received is supposed to be a new one and to be a conventional job.

When a new job is received, at step S3402 a new entry is added to the details for the job. When at step S3403 no sender is present, at step S3404 the entry for a sender is added. At step S3405 the details of the action and the notifications are also added. When a sender is present, at step S3406 the details of the notification are added. If at step S3407 no receiver is present, at step S3408 a receiver is added, and at step S3409 the action performed by receiver is also added.

When a conventional job is received, a receiver for the job is checked. If a receiver is present and can perform the same action as that required for the received job, the action status of the previous job is canceled, and a new record is created. When the existing receiver can perform an action that differs from that for the receiver, a new entry is added for the receiver. The details contained in the notification may also be added. Except when the user type differs, the action status is set to Todo.

Fig. 35 is a flowchart showing the GetListOfJobAttribute processing.

All the jobs for a user at a designated place are examined, and the details for all the jobs are obtained. The jobs are Heldjobs and Historyjobs. The database 104 searches for jobs for individual UserIDs, and to obtain a list, all such jobs are selected and entered in the list (steps S3501 to S3507).

Fig. 36 is a flowchart showing the PollJob processing.

A search is performed for a job for which the user type is Receiver, the action status is Todo, and WhenTodo is shorter than the current system time (steps S3601 to S3605). When such a job is found, the details of the job are obtained and are added to the action setup, and TRUE is returned (steps S3606 to S3608). When no such job as is described above is found, FALSE is returned (step S3609).

Fig. 37 is a flowchart showing the PollNotify processing.

A search is performed for a first record for which CanNotify is Receiver, WhetherToNotify is TRUE and WhenToNotify is shorter than the current system time (steps S3701 to S3705). When such a record is found, the details of the notification are obtained and are added to the notification setup, and TRUE is returned (steps S3706 to S3708). When no such job as is described above is found, FALSE is returned (step S3709).

Fig. 38 is a flowchart showing the CancelAction processing.

First, a search is made for a record having a designated action ID. When such a record is found, a search is made for a job having the same action ID, and the size of the job is obtained (steps S3801 to S3804). When the job size is smaller than the JobSizeLimit set by the manager, at step S3805 the action status is examined. When the action status is "Done", or the job size is equal to or greater than the JobSizeLimit, the action status is changed to "Deleted", and the record is deleted (steps S3807 and S3808). In the other cases, at step S3806 the action status is set to "Cancel", and at step S3809 all notifications corresponding to the action ID are deleted.

Fig. 39 is a flowchart showing the EditAction processing.

A search is performed for a record having a designated action ID. When such a record is found, the action status is converted into a received parameter (steps S3901 to S3903).

Fig. 40 is a flowchart showing the EditAction processing. The prototype differs from that explained in Fig. 39.

A search is made for a record having a designated action ID. When the action for the pertinent record matches the action designated by the action ID, and

when the action status is Hold, the action status is changed to a received parameter (steps S4001 to S4006). When a pertinent record is not found, at step S4004 a new action is added.

Fig. 41 is a flowchart showing the RescheduleAction processing.

A search is made for a record having a designated action ID. When a pertinent record is found and the action status is not "Done", Whentodo is converted to received NewTime (steps S4101 to S4104).

Fig. 42 is a flowchart showing the RescheduleAction processing. The prototype differs from that explained in Fig. 41.

At step S4201 a search is made for a record having a designated action ID. When a pertinent record is found and the UserType matches, the action status is changed to "Cancel", and a new record for which the action status is Todo is added (steps S4201 to S4204). When no pertinent record is found, an examination is performed to determine whether a user is present. If a user is found, the UserID is obtained. If no user is found, a new user is added and its UserID is selected, and a new action that corresponds to the UserID is added (steps S4206 to S4209).

Fig. 43 is a flowchart showing the RescheduleAction processing. The prototype differs from those as explained in Figs. 41 and 42.

0247056 : 4021498

A search is made for a record having a designated action ID. When a pertinent record is found, the action status and the action are examined. When the action and the action ID match, and when the action status is Hold and Uncompleted, the WhenTodo time is changed to a NewTime (steps S4301 and S4302 and S4304 to S4308). When no pertinent record is found, at step S4303 a new action for which the action status is Todo is added, and the WhenTodo time is changed to a NewTime.

Fig. 44 is a flowchart showing the AddNotification processing.

A new record is added to a notification, and the general information for parameters (GeneratedFromparameter) are examined to prepare a new entry concerning this information.

Fig. 45 is a flowchart showing the AddInstruction processing.

When a ReceiveJob or a SendJob is encountered, the setup for an instruction is called. First, at step S4501 a check is performed to determine whether a designated UserID is present in the database 104. When the UserID is not present, the processing is thereafter terminated. When the UserID is present, at step S4502 a record is obtained from the instruction list, and at step S4503 details for a new instruction are added to the user ID.

The instruction is added to an instruction table in the database 104. An associated action and a notification provided upon receiving the instruction are reflected in an action table and a notification table (steps S4504 and S4506).

For both the ReceiveJob and the SendJob, when instructions for generating these jobs are established, a record, which serves as a template for generating a new action and a new notification, is added to the action table and the notification table.

Fig. 46 is a flowchart showing the GetInstruction processing.

This function is called using ReceiveJobData and SendJobData. First, at step S4601 all the records in the instruction table are examined to determine whether the action type is Receive or Send, and all the instructions for the action type are obtained. At step S4602 the details (values set as instructions) contained in the JobMessage are employed to determine whether an instruction can be executed. A check function, which will be described later, is used to examine the validity of the instruction. When the instruction is valid, at step S4603 the ID for the instruction is added to the list. When at step S4604 all the instructions have been processed, a listing of the effective instruction IDs is returned.

Fig. 47 is a flowchart showing the

ExecutionInstruction processing.

This function is called using ReceiveJobData and SendJobData. A search is made for records in the action table and in the notification tables. These records are used in accordance with the instructions in the instruction list, and copies of them are prepared for each table having a Todo flag (set to TRUE) (steps S4701 to S4708).

The action table is searched to find a dummy action that is set in accordance with the instruction. Based on the dummy action, a new, appropriate record is added and the action is performed.

The notification table is searched to find a dummy notification that is set in accordance with the instructions. Based on the dummy notification, a new, appropriate record is added and the notification is issued.

Fig. 89 is a flowchart showing the ResetInstruction processing. The prototype is Void ResetInstructions(dwUserId, pInstructionList).

First, a search is made for all the commands for a designated user ID, and obtained commands and corresponding actions and notifications are deleted (steps S8901 to S8905). Then, new commands that received are entered in the command list (step S8906).

Fig. 90 is a flowchart showing the DeleteAllInstructions processing. The prototype is

Void DeleteAllInstructions(dwUserId).

A search is made for all the commands for a designated User ID, and obtained commands and corresponding actions and notifications are deleted (steps S9001 to S9005).

Fig. 91 is a flowchart showing the DeleteInstructions processing. The prototype is Void DeleteInstructions(dwInstructionId).

A search is made for a command for a designated instruction ID, and the obtained command and a corresponding action and a notification are deleted (steps S9101 to S9104).

Fig. 92 is a flowchart showing the GetInstructionDetails processing. The prototype is Void GetInstructionDetails(dwUserId).

A search is made for commands for a designated user ID, and the obtained commands and a list of the details of corresponding actions and notifications are returned (steps S9201 to S9208).

Fig. 93 is a flowchart showing Check processing. The prototype is Bool Check(nJobChk, JobNameConnector, nDeviceChk, DeviceConnector, nPersonChk, PersonConnector, nTimeChk, TimeConnector, nStatusChk, nStatusCode).

This function is called from inside GetInstructionIds( ). A check is performed to determine whether the command can be executed and is effective.

If the command is effective, TRUE is returned. If the command is not effective, FALSE is returned (steps S9301 to S9303).

Fig. 94 is a flowchart showing the GetJobAttributes processing. The prototype is Void GetJobAttributes(dwJobId, poJobMessage).

A search is made for a job having a designated job ID, the details concerning the job are set in the JobMessage (steps S9401 to S9403).

Fig. 95 is a flowchart showing the GetJobAttributes processing. The prototype is Void GetJobAttributes(dwJobId, poJobMessage).

A search is made for a job having a designated job ID, and the details concerning the job are set in the JobMessage. Further, a search is made for details concerning the sender and the receiver of the job and the details concerning the associated action, and these are set in the JobMessage (steps S9501 to S9505).

Fig. 96 is a flowchart showing the GetActionAttributes processing. The prototype is Void GetActionAttributes(dwActinId, poActionMessage).

A search is made for an action having a designated action ID, and the details concerning the obtained action are set in the ActionMessage. Further, the names and addresses of the sender and the receiver of the job are set in the ActionMessages for the sender and the receiver (steps S9601 to S9605).

Fig. 97 is a flowchart showing the DeleteJob processing. The prototype is Void DeleteJob(dwUserId, dwJobId).

At step S9701 a search is made for an action for a designated UserID having a designated JobID. If at step S9702 such an action is found, at step S9703 the type of action status is examined. When the action status is "Done", at step S9704 the action status is changed to "Cancel", and the current time is set as the execution time.

When the action status is already set to "Done" or "Cancel", at step S9705 the action and all the associated notifications are deleted. At step S9706 a check is performed to determine whether there is an action for a UserID other than the designated UserID having the designated JobID. If no such action is found, at step S9707 all the actions for the designated UserID having the designated JobID are considered to have been done or canceled. When there are no actions for other users and all the actions have been done or canceled, at step S9708 the record for this job is deleted from the job table.

Fig. 98 is a flowchart showing the GetNotificationList processing. The prototype is Void GetNotificationList(nGeneratedFrom, dwId).

A search is made for all the notifications that were generated at designated generation places (either

actions or instructions) and that have designated IDs, and the details concerning the obtained notifications are added to the list, which is then returned (steps S9801 to S9804).

Fig. 99 is a flowchart showing the SetNotificationCondition processing. The prototype is Void SetNotificationCondition(nGeneratedFrom, dwId, nResult).

A search is made for a notification that was generated at a designated place (nGeneratedFrom) and that has a designated Id. If the obtained notification consists of a designated value (nResult), the WhetherToNotify is set to TRUE. When the notification does not consist of a designated value, the WhetherToNotify is set to FALSE (steps S9901 to S9905).

Fig. 100 is a flowchart showing the SetNotificationCondition processing. The prototype is Void SetNotificationCondition(nGeneratedFrom, dwId, bCanNotifyFlag, nDummy).

A search is made for a notification that was generated at a designated place and that has a designated notification ID, and CanNotifyFlag is set to a designated value (bCanNotifyFlag) (steps S10001 to S10003).

Fig. 101 is a flowchart showing the SetNotificationStatus processing. The prototype is Void SetNotificationStatus(dwNotificationId,

09705556 - 041498

bNotificationStatus).

A search is made for a notification having a designated notification ID, and the notification status is set to a designated value (steps S10101 to S10103).

Fig. 102 is a flowchart showing the ClearHistory processing. The prototype is Void ClearHistory( ).

First, at step S10201 the action status is examined, and actions having the status "Done", "Canceled", "Ignored" and "Deleted" are obtained. If at step S10203 a job has the action status "Done", at step S10204 the execution time for each of the obtained actions is examined. For the other jobs, at step S10205 the WhenTodo time is examined. At step S10206 the obtained time is compared with the history time limit. Such a limit is set for the job by the manager. Fig. 133 is a diagram showing an example setup screen. On this screen, the history time limit is set to one month (1 Month). When, as a result of the comparison, it is found that a time period equal to or longer than that set for the time limit has elapsed since the execution time or the scheduled execution time, at step S10207 the action and the job are deleted.

Fig. 103 is a flowchart showing the DeleteAllPublicInfoJobs processing. The prototype is Void DeleteAllPublicInfoJobs( ).

A search is made for all the PublicInfoJobs, and the action status is set to "Cancel" (steps S10301 to

EP 0 794 496 A2

S10304).

Fig. 104 is a flowchart showing the PrintPublicInfo processing. The prototype is Void PrintPublicInfo(dwActionId).

A search is made for an action having a designated action ID to determine whether there is a PublicInfoJob. When a PublicInfoJob is found, a new action is added. The action that is so set using PublicInfo that Print is the action type, WhenTodo is the current time and Todo is the action status (steps S10401 to S10407).

Fig. 105 is a flowchart showing the SearchData processing. The prototype is Void SearchData(dwUserId, poSearchData).

A list is obtained of all the jobs for a designated user, and the details in the list are compared with the details for the Search Data object. When the details match, a node is added to a new list, which is then returned (steps S10501 to S10507).

Fig. 48 is a flowchart showing the processing performed by the desktop server component 103 in response to a request from the client component 102.

At step S4801 the server component 103 receives a request from the client component 102 and performs a corresponding process. When at step S4802 the request is for "Login", the login verb and the remote device list are acquired, and then a user password is obtained

(steps S4803 and S4804). Following this, an HTML page corresponding to the user is created, the user password is stored, and the HTML page is transmitted to the client component 102 (steps S4805, S4806 and S4814). The processing is thereafter terminated.

When the request is for "Print a File", the user password and the name of a file to be printed are obtained. Then an external application is called, and the file having the designated file name is written to a print file employed by the application. The output print file is then converted into a message object, and the job is transmitted to the first device on the remote device list. Finally, a corresponding HTML page is created and is transmitted to the client component 102 (steps S4807 to S4813 and S4814). The processing is thereafter terminated. The processing performed when the request from the client component 102 is "Read Mail" or "Print Mail" will be described later while referring to Fig. 49. The processing performed when the request from the client component 102 is "View Schedule" or "Print Schedule" will be described later while referring to Fig. 50. The processing performed when the request from the client component 102 is "Goto Other Device" will be described later while referring to Fig. 51. And the processing performed when the request from the client component 102 is "Logout" or "Help" will be described later while referring to Fig.

52.

Fig. 49 is a flowchart showing the processing performed for a request related to mail. This processing is employed when the request from the client component 102 is "Read Mail" or "Print Mail".

When the request is "Read Mail", first, the user password for the mail server is obtained, and a session for the reading of mail is opened. When the designated mail has been read, the session is closed (steps S4902 to S4905).

For the request "Print Mail", the same process is performed as for the "Read Mail" request, mail is written to a file, a Job message is generated, and the job is transmitted to the first device on the remote device list (steps S4906 to S4912).

Finally, in either case, a corresponding HTML page is generated and is transmitted to the client component 102 (steps S4913 and S4914). The processing is thereafter terminated.

Fig. 50 is a flowchart showing the processing performed for a request related to a schedule. This processing is performed by the desk server when the request from the client component 102 is "View Schedule" or "Print Schedule".

When the request is "View Schedule", a check is performed to determine whether the schedule type is "Daily" or "Monthly", and schedule data are obtained

(steps S5002 and S5003). When the request is "Print Schedule", the same process is performed as above, the data are written to a print file, a job message is generated, and the job is transmitted to the first device on the remote device list (steps S5004 to S5009).

In either case, a corresponding HTML page is generated, and is transmitted to the client component 102. The processing is thereafter terminated (steps S5010 to S5011).

Fig. 51 is a flowchart showing the processing performed for a request related to another device. This processing is performed by the desk server when the request from the client component 102 is "Goto Other Device".

When the request is Goto Other Device, the name and the address of a device are obtained. Then, the device is added to the remote device list and the login verb is generated (steps S5102 to S5104). Using the login verb, the device is logged in, and finally a corresponding HTML page is generated and is transmitted to the client component 102 (S5105 to S5115). The processing is thereafter terminated. This processing is the same as that explained while referring to Fig. 16.

Fig. 52 is a flowchart showing the processing performed for a request related to logging-out or to

help. This processing is performed by the desk server when the request from the client component 102 is "Logout" or "Help".

When at step S5201 a "Logout" request is received, at step S5202 a check is performed to determine whether the remote device list is empty. When the remote device list is empty, at step S5205, in accordance with the status, an OpeningScreen page is generated. When the remote device list is not empty, however, at step S5203 the next device is logged in using the login verb = Disconnect, and at step S5204 this next device is deleted from the remote device list. These processes are repeated until the remote device list has been emptied. That is, when all the devices on the remote device list have been logged out. When the list has been emptied, at step S5205 the OpeningScreen page is generated.

Upon receipt of a "Help" request, a help context parameter is obtained, and a corresponding help screen HTML page is generated (steps S5206 and S5207).

For both the requests, the generated HTML page is transmitted to the client component 102, and the processing is thereafter terminated.

Fig. 53 is a flowchart showing the processing performed beginning at the initial menu screen. Fig. 106 is a diagram showing an example initial menu screen. When a job is present in a print queue, it is

displayed on the status screen for the initial menu. The name and the sender of the job are displayed as job information.

At step S5301 a user selects a desired item from the initial menu. At step S5302 the selected item is established, and a new screen is displayed in accordance with the item.

First, when "Device" is selected, at step S5303 the state of the device is displayed. When "Back" or "Forward" is selected, at step S5304 the preceding or the succeeding screen is displayed. When "End" is selected, at step S5305 the end process is performed.

Furthermore, when "New Interaction" is selected, at step S5306 a new process (login process), which will be described later while referring to Fig. 55, is initiated, and the screen is changed to a "Login" screen (Fig. 112). When "Help" is selected, at step S5307 the help screen is displayed.

When "Print URL" is selected, the screen is changed to a "URL print" screen (Fig. 107). When at step S5308 the URL is directly input or is designated by a reference and "Go" is selected, at step S5309 information is obtained and previewed. At step S5310 the contents that are confirmed are printed, and then the screen is returned to the initial menu screen.

When "Public Info" is selected, at step S5311 program control goes to the public information

processing, which will be described later while referring to Fig. 54, and the screen is changed to a "public information process" screen (Fig. 110).

When "Goto Device" is selected, at step S5312 a setup screen (Fig. 81) for accessing another device is displayed. Hereinafter performed is the same process as was performed when the login verb was "Device" in the processing for accessing another device that was explained in Fig. 51.

A job in a print queue can also be selected on the initial screen. To select a job, a user touches a button displayed in front of a desired job name. When a specific job is selected in this manner, at step S5313 a password input screen (Fig. 108) is displayed. A password is input, and when it matches the password assigned for the selected job, a process setup screen (Fig. 109) is displayed for the job in the print queue that was selected.

Following this, at step S5314 an action for the job is selected, and at step S5315 an item concerning the execution of the action is selected. When "Print later" is selected as an action, a print time can be set as the item. A specific date (absolute date) can be set for the print time, or a relative time that must elapse following a setup time, such as "After 1 Hour", can be set. For this setup, items such as "1 hour later", "2 hours later", "6 hours later", "Tomorrow",

EP 1 705 556 A1

"Day after tomorrow", "1 week later" or "2 weeks later", are prepared and listed as choices in a menu. When an absolute date is employed, the current date is regarded as a default value. To select and input another date, a pertinent date displayed on a calendar is touched. To select another time, the current time is changed.

When "Hold Here" is selected, the time for the holding period is set. In this case, as well as in the print data later case, the absolute date is designated for the holding limit, or a holding period, such as one hour (For 1 Hour), can be selected and set in the menu. To designate an absolute date or a relative date, a touch keyboard may be displayed with which numerals can be directly entered, or a displayed numeral may be incremented or decremented the number of times a specific button is selected.

The action is set and is performed in accordance with the action-associated item and the date item that are thus selected or established. First, when "Print later" is selected, at step S5317 a print job is deleted from the print queue, and with the print time (absolute time) is entered in the pending job list. The screen is then returned to the initial menu screen, and when the setup time is reached, printing is performed.

When "Hold" is selected, at step S5318 the print

EP 0 654 736 A2

job is deleted from the print queue, and with the action "Hold" and the set holding limit is entered in the pending job list. The screen is then returned to the initial menu screen. Thereafter, the job is held the period of time represented by the holding period, but will be canceled if it is not processed before the holding period has expired.

When "Pause/Restart Printing" is selected, at step S5319 printing is temporarily halted, the screen is returned to the initial menu screen, and the selection of "Pause/Restart Printing" (a second depression of the same button) is waited for. When "Cancel Printing" is selected, at step S5320 the print job is deleted from the print queue, and "Cancel" is recorded in the history as the action taken for this job. The screen is then returned to the initial menu screen.

Fig. 54 is a flowchart showing the processing for public information. The screen shifting and the sequence for the processing are shown when the "Public Info" item in the initial menu screen is selected. First, at step S5401 a public information list for the printer is displayed. Fig. 110 is a diagram showing an example setup screen for a public information list and for public information processing. Information having an attribute called public information (a job having an action called "public") is displayed in the list, and can be printed without any password being required.

When at step S5402 a specific job is selected from the list, program control goes to step S5405. When "From Other Device" is selected, program control goes to step S5415 to process the public information stored in another device.

At step S5405 a process corresponding to the specific job is selected. When "Print" is selected, at step S5407 a printing place, which will be descried later in detail in the printing process for a normal job, and the printing time, as needed, are designated. At step S5408 the selected public information is printed. When "Preview" is selected, at step S5409 the previewing of data is performed, and at step S5410 the next process is selected.

If at step S5406 or S5410 "Add (Make Job Public Info. For Other Device)" is selected, another device is designated for publishing the selected public information, and the selected public information is added to the publication list for the device. Fig. 111 is a diagram showing a setup screen for publishing the information on another device.

At step S5412 the address and the name are given of a device that is designated to serve as an added destination. Also designated is the period of time for the publication of the information. For this, as in the previous Printing/Holding case, an absolute date may be set to constitute the publication period, or

instead, a time period may be set that is measured from the current time. If immediate publication of the information is not desired, a beginning date for the publication process may be set. In this case, a relative period, such as "1 week later", can also be employed. In order to limit the publication period, the period designated for the publication of public information is examined before a list of such information is displayed, and information for which the publication period has expired is disregarded. Such a list may be examined periodically, and information for which the publication period has expired can be deleted.

At step S5415 the previously described setup screen (Fig. 81) for accessing another device is displayed, and the address and the name of the designated device that is to be accessed are entered. At step S5416 the public information list is obtained from the accessed device and is displayed. Hereinafter, the same process can be performed as is performed for a local device.

Fig. 55 is a flowchart showing the login processing performed when the performance of a new process on the initial menu is selected. First, at step S5501 a "Login" screen (Fig. 112) is displayed, and the user's identifier that has been input is examined. When the login is permitted, at step S5502 a

check is performed to determine whether there are jobs available for the user who has logged in, i.e., pending jobs. If there are such jobs, at step S5504 the list of jobs (Fig. 113) is displayed, and to initiate a process to perform the action, a job is selected which will be described later while referring to Fig. 56. If no jobs are available, at step S5503 the main menu (Fig. 121) is displayed and is used for the initiation of processing, a process which will be described while referring to Fig. 64.

Fig. 56 is a flowchart showing the processing for selecting a job and for performing an action. This processing is performed when a job is available for a user who has logged in, and at step S5601 a list of pending jobs is displayed. Fig. 113 is a diagram showing an example pending job list.

The pending jobs are a job that is to be printed on a specific date, a job that is to be transmitted on a specific date, and a job that is simply to be held until a specific date has been reached (and which will be deleted if it is not processed before the specified date). Job names, the senders or the recipients, the action types (Print, Send and Hold), and scheduled action dates are entered in the list. A variety of colors or identifying marks that correspond to different action types are employed for the displayed jobs so that their types can be readily identified. By

changing their statuses to "Done" or "Canceled", jobs that have already been executed or that have been canceled can continue be maintained in the history and, as needed, can be displayed in the list with the jobs that are to be executed. It should be noted that, in this case, the display forms of these jobs are changed in accordance with their statuses.

At step S5602 a target job is selected, and at step S5603 a process (action) corresponding to the selected job is selected. When at step S5604 "Main Menu" is selected, at step S5605 processing beginning at the main menu, which will be described later while referring to Fig. 64, is performed. When "Search" is selected, at step S5606 search processing is performed that will be described later while referring to Fig. 65. When "Print" is selected, at step S5607 the selected job is printed, which will be described later while referring to Fig. 60. When "Send" is selected, at step S5610 the selected job is transmitted, which will be described later while referring to Fig. 62. When "Preview" is selected, at step S5608 the selected job is previewed, which will be described later while referring to Fig. 57. When "Delete" is selected, at step S5609 the selected job is deleted, which will be described later while referring to Fig. 58. When "Schedule" is selected, at step S5611 the schedule for the selected job is changed, which will be described

later while referring to Fig. 59. And when "Logout" is selected, at step S5612 the logout processing that was explained while referring to Fig. 52 is performed.

Fig. 57 is a flowchart showing the selected job preview processing for previewing a job that is selected from the list of available jobs. At step S5701 a specified job is previewed. Fig. 114 is a diagram showing an example job preview screen. At step S5702 a process for the specified job is selected.

When at step S5703 "Print" is selected, at step S5704 the selected job is printed, which will be described later while referring to Fig. 60. When "Send" is selected, at step S5706 the selected job is transmitted, which will be described later while referring to Fig. 62. When "Delete" is selected, at step S5705 the selected job is deleted, which will be described later while referring to Fig. 58. When "Schedule" is selected, at step S5707 the schedule for the selected job is changed, which will be described later while referring to Fig. 59. And when "Cancel" is selected, at step S5708 the screen display is returned to that for the display of the job list that was explained while referring to Fig. 56.

Fig. 58 is a flowchart showing the selected job deletion processing performed when a job selected from the list of available jobs is to be deleted. First, at step S5801 a job to be deleted is previewed together

with the identification information for the job in order to permit the user to confirm the deletion. Fig. 115 is a diagram showing a deletion confirmation screen. When "Delete" is selected, at step S5802 the deletion of the job is initiated. At this time, the processing explained in Fig. 97 is performed. Since a job to be deleted is selected from the pending job list, its action status is "Unexecuted", whereas the status of a deleted job is "Canceled", which is recorded in the history for the user. At step S5803 the screen is returned to the display of the job list explained in Fig. 56.

Fig. 59 is a flowchart showing the processing for changing the schedule of a selected job. This processing is performed to change the schedule for a job selected from an available job list. At step S5901 the current schedule, which is to be changed, is displayed. Fig. 116 is a diagram showing a setup screen for changing the schedule. At step S5902 the schedule is changed. At step S5903 the screen is returned to the display of the job list explained in Fig. 56.

Fig. 60 is a flowchart showing the processing for printing a selected job. This processing is performed to print a job that is selected from the available job list. At step S6001 the original action type of a selected job is determined. When the original action

type is not "Print", at step S6002 a print setup menu is displayed. Fig. 117 is a diagram showing an example print setup menu. The setup items are the place at which printing is to be performed (a local device or another device), a device name and, if a different device is selected for employment, its address, and the printing time.

To print using a different device, "Send" is recorded as the action type in the history for the job. When printing is initiated by a different device, a Send method, which will be described later, or a Transfer method may be employed for the transmission of data.

At step S6003 a process is selected. When at step S6004 "Print" is selected, at step S6005 the contents entered by the user are set for the device, and if immediate printing is instructed, the printing is initiated. At step S6006 the screen is returned to the display of the job list that was explained in Fig. 56. When "Preview" is selected, at step S6007 the data are previewed, and if printing is required, program control moves to step S6005. When "Notify" is selected, at step S6009 a notification is set and the screen is returned to the print setup menu. Fig. 118 is a diagram showing an example notification setup screen. The notification setup items are the name of a notification recipient, a notification medium (a voice

message, a popup window, e-mail, a telephone, a facsimile machine, or a pager), a notification destination (an address, a telephone number, etc.), a notification trigger (at the time of a success, at the time of a failure, at the time of accessing, etc.), and a time extending from the triggering of the notification until the actual issuance of a notification. In addition, on this screen can be displayed a list of notifications, for each of which are included the setup contents.

Fig. 61 is a flowchart showing the processing for changing the print setup for a selected job. In Fig. 61 the state shifting and the processing sequence are shown when the original action type of a selected job is "Print".

At step S6101 a print setup change menu is displayed. Fig. 119 is a diagram showing an example print setup change menu. At step S6102 a process corresponding to a selected job is designated. When "Print Now Also" is selected, at step S6104, in addition to the selected job, a job is added for which the print time for the selected job is used as the current time. When "Print Now" is selected, the print time for the selected job is changed to the current time. Therefore, in these cases, the printing is performed at the current time. When "Schedule" is selected, at step S6106 the schedule change menu in

Fig. 116 is displayed. At step S6107 the print schedule is changed by using the menu. In either case, at step S6108 the screen is returned to the display for the job list that was explained in Fig. 56.

Fig. 62 is a flowchart showing the selected job transmission processing. In Fig. 62, the state shifting and the sequence of processing are shown for the transmission of a job that is selected from the list of available jobs. At step S6201 the original action type of the selected job is determined. When the original action type is "Send", the transmission setup change processing, which will be described later while referring to Fig. 63, is performed. When the original action type is not "Send", at step S6202 a transmission setup menu is displayed. Fig. 70 is a diagram showing an example transmission setup menu.

At step S6203 a destination and a transmission time are set and a process is selected. These setups are performed in the same manner as in the printing. When at step S6204 "Send" is selected, at step S6205 a selected job is copied and the copy is transmitted. In this case, the selected job remains in the job list. When "Transfer" is selected, at step S6206 the selected job is transferred and is deleted from the job list. For either the transmission or the transferring of a job, at step S6209 the screen is returned to the display of the job list that was explained in Fig. 56.

09170656-101498

When "Notification" is selected, at step S6207 the notification setup screen is displayed. After the setup for the notification has been completed, the screen is returned to the transmission setup menu for selecting transmission or transfer.

Fig. 63 is a flowchart showing the processing for changing the transmission setup for a selected job. In Fig. 63, are shown the state shifting and the sequence of processing when the original action type of a selected job is "Send".

At step S6301 the transmission setup change menu is displayed. Fig. 71 is a diagram showing an example transmission setup change menu. At step S6302 a process for the selected job is selected. When "Send Now Also" is selected, at step S6304, in addition to the selected job, a job is added for which the transmission time for the selected job is used as the current time. When "Send Now" is selected, the transmission time for the selected job is changed to the current time. Therefore, in these cases, the transmission of a job is performed at the current time. When "Schedule" is selected, at step S6306 the schedule change menu in Fig. 116 is displayed, and at step S6307 the transmission schedule is changed by using the menu. In either case, at step S6308 the screen is returned to the display for the job list that was explained in Fig. 56. When "Notify" is selected, at step S6309 a

correction menu is displayed.

Fig. 120 is a diagram showing an example correction menu. At this time, the list of transmission destinations is displayed. At step S6310 a new transmission destination is added/designated, a transmission destination selected from the list is corrected (deleted or changed), a process to be performed by the transmission destination is changed, a password is changed, and a transmission time is changed. For the setup of the notification, at step S6312 the notification setup menu is displayed, and is then returned to the correction menu. When the notification setup is not required, the screen is returned to the transmission setup change menu.

Fig. 64 is a flowchart showing the processing performed beginning at the main menu. In Fig. 64 is shown the screen shifting on the main menu and the processing sequence. At step S6401 the main menu is displayed. Fig. 121 is a diagram showing an example main menu. At step S6402 a process (action) is selected.

When at step S6402 "Logout" is selected, at step S6404 the logout processing that was explained in Fig. 52 is performed. When "Help" is selected, at step S6405 the help processing that was explained in Fig. 52 is performed. When "Search" is selected, at step S6406 the search processing, which will be described later

while referring to Fig. 65, is performed. When "Print" is selected, at step S6407 the print processing, which will be described later while referring to Fig. 67, is performed. When "Send" is selected, at step S6408 the transmission processing, which will be described later while referring to Fig. 69, is performed. When "Delete" is selected, at step S6409 the deletion processing, which will be described later while referring to Fig. 75, is performed. When "Set Instructions" is selected, at step S6410 the instruction setup processing, which will be described later while referring to Fig. 77, is performed. When "Reschedule" is selected, at step S6411 the rescheduling processing, which will be described later while referring to Fig. 78. When "ADD Public Information" is selected, at step S6412 the processing for adding public information, which will be described later while referring to Fig. 66, is performed. When "Goto Device" is selected, at step S6413 the processing for accessing another device, which will be described later while referring to Fig. 80, is performed. When "Goto My Desktop" is selected, at step S6414 the processing for accessing a desktop, which will be described later while referring to Fig. 82, is performed.

Fig. 65 is a flowchart showing the search processing performed when "Search" is selected on the

main menu.

At step S6501 a search condition for searching for a job is set. A job setup time, an execution time, an execution state and a sender can be employed as the search condition. Not only pending jobs but also jobs that were executed and stored in the history are searched for. Especially when the condition where the execution state "Done" (also "Canceled", if needed) is employed for the search, the history can be displayed. At step S6502 the search is initiated and a list of the jobs that are found is displayed. At step S6503 a job is selected from the job list, and at step S6504 a process corresponding to the selected job is designated.

When at step S6504 "Print" is selected, at step S6506 the selected job is printed, which was explained in Fig. 60. When "Preview" is selected, at step S6508 the selected job is deleted, which was explained in Fig. 58. When "Reschedule" is selected, at step S6510 the schedule of the selected job is changed, which was explained in Fig. 59. When "Main Menu" is selected, at step S6511 the processing beginning at the main menu is performed, which was explained in Fig. 64.

Fig. 66 is a flowchart showing the public information addition processing performed when "Add Public Information" is selected. At step S6601 a job used as public information is selected from a job list.

0947056 - 1014498

At step S6602 a public information addition menu (Fig. 111) is displayed, and an added destination and a publication period are designated. The details are the same as was explained for the public information processing. It should be noted that a job in the user's job list is to be published. After the designation of the details, at step S6603 the addition of the job to the public information list is instructed, and at step S6605 a selected job is added to the public information list. When "Cancel" is selected after the processing has been completed, at step S6606 the screen is returned to the main menu.

Fig. 67 is a flowchart showing the printing processing performed when "Print" is selected from the main menu.

At step S6701 a place whereat a job to be printed is present is selected. Fig. 122 is a diagram showing an example menu screen for selecting a place whereat a job to be printed is present. When "Jobs on this Device" is selected, at step S6703 the list of print jobs in the current device is displayed. Fig. 123 is a diagram showing an example menu for selecting a job to be printed. At step S6704 a job to be printed is selected, and at step S6705 the printing setup is performed for a selected job. This process is performed in the same manner as explained in Fig. 60.

When "Jobs on other Device" or "Jobs from my

Desktop" is selected, at step S6706 the address of the device is designated, and at step S6707 the login screen is downloaded from the device at that address. At step S6708 the login process is performed in accordance with the downloaded screen. When the login is completed, since the login verb is "Print", at step S6710 the menu screen in Fig. 122, for selecting a job to be printed, is downloaded to select a printing device, as is explained in Fig. 51. When a current printer is employed, at step S6711 the remote printing process, which will be described while referring to Fig. 68, is performed by the printer. When the desktop is employed, at step S6712 the remote printing process is performed by the desktop. When another device is employed, at step S6713 the remote printing process is performed by that device.

Fig. 68 is a flowchart showing the remote printing processing performed by the printer. In Fig. 68 is shown the sequence of post-login processing performed when printing using another device is designated on the main menu and the designated device is the same type of printer. The processing is the same as that for the printing of a job stored in the current device. It should be noted that the menu and the list are downloaded from a device that is accessed.

Fig. 69 is a flowchart showing the transmission processing. In Fig. 69 are shown the screen shifting

and the sequence of processing performed when "Send" is selected from the main menu.

At step S6901 a place, either a current device, another device or a desktop, is selected whereat a job to be transmitted is present. Fig. 124 is a diagram showing an example menu screen for selecting a place whereat a job to be transmitted is present. When "jobs on this Device" is selected, at step S6902 the job list for this device is displayed. Fig. 125 is a diagram showing an example menu for selecting a job to be transmitted. At step S6903 a job to be transmitted is selected. Hereinafter the selected job transmission processing that was explained in Fig. 62 is performed.

When another device or a desktop is selected as a place whereat a job to be transmitted is present, at step S6904 the address of the device is designated, and at step S6905 the login screen is downloaded from the device at that address. At step S6906 the login process is performed in accordance with the screen. When the login is completed, since the login verb is "Send", at step S6908 the menu screen in Fig. 124, for selecting a job to be transmitted, is downloaded to select a transmission source device, as is explained in Fig. 51. When the printer is employed for the transmission, at step S6909 the remote sending processing using the printer, which will be described while referring to Fig. 72, is performed. When the

EP 2 056 574 A1

desktop is employed for the transmission, at step S6910 the remote sending processing using the desktop is performed. When another device is employed for the transmission, at step S6911 the remote sending processing using another device is performed.

Fig. 72 is a flowchart showing the remote sending processing performed by the printer. In Fig. 72 is shown the sequence of post-login processing performed when transmission by another device is designated on the main menu, and the designated device is the same type of printer.

When there is a job in the designated device, at step S7202 the list of jobs to be transmitted is displayed. At step S7203 a job is selected from the job list, and at step S7204 a process is selected. When "Send" is selected, the selected job is transmitted. This processing is the same as the transmission of a selected job by the current device, which was explained while referring to Fig. 69. It should be noted that the menu and the list are downloaded from the device that is accessed.

When at step S7204 "Search" is selected, at step S7206 a new job to be transmitted is searched for. When "Logout" is selected, at step S7207 the logout processing that was explained in Fig. 52 is performed. When "Main Menu" is selected, at step S7208 the screen is returned to the display of the main menu.

0247055 - 1041498

Fig. 75 is a flowchart showing the deletion processing performed when "Delete" is selected from the main menu.

At step S7501 a place, either a current device, another device or a desktop, whereat a job to be deleted is present is selected. Fig. 73 is a diagram showing an example menu for selecting a device whereat a job to be deleted is present. When the current device is selected, at step S7502 the job list for this device is displayed. Fig. 74 is a diagram showing an example list for jobs to be deleted. At step S7503 a job to be deleted is selected. Then, the selected job is deleted in the manner as is explained in Fig. 58.

When another device or a desktop is selected as a place whereat a job to be deleted is present, at step S7505 the address of the device is designated, and at step S7506 the login screen is downloaded from the device at that address. At step S7507 the login process is performed in accordance with the downloaded screen. When the login is completed, since the login verb is "Delete", the menu screen in Fig. 74 for selecting a job to be deleted is downloaded to select a job, as explained in Fig. 51. When a job is to be deleted from the printer, at step S7510 the remote deletion processing, which will be described while referring to Fig. 76, is performed by the printer. When a job is to be deleted from the desktop, at step

S7511 the remote deletion process is performed by the desktop. When a job is to be deleted from another device, at step S7512 the remote deletion process is performed by that device.

Fig. 76 is a flowchart showing the remote deletion processing performed by the printer. In Fig. 76 is shown the sequence of post-login processing when the transmission from another device is designated on the main menu and the designated device is the same type of printer.

When a job is present in the designated device, at step S7601 the job list is displayed, at step S7602 a job to be deleted from the list is selected, and at step S7603 a process is selected. When "Delete" is selected, at step S7605 the deletion confirmation menu in Fig. 115 is displayed, and at step S7606 the selected job is deleted. This processing is performed in the same manner as is the deletion of the selected job in the current device, which was explained in Fig. 58. It should be noted that the list and the menu are downloaded from the device that is accessed.

When at step S7604 "Search" is selected, at step S7607 a new job to be deleted is searched for. When "Logout" is selected, at step S7608 the logout process explained in Fig. 52 is performed. When "Main Menu" is selected, at step S7609 the screen is returned to the main menu.

0054056 - 10/04/05

Fig. 77 is a flowchart showing the processing for setting instructions. In Fig. 77 are shown the screen shifting and the sequence of processing when "Set Instructions" is selected on the main menu. At step S7701 an instruction setup screen is displayed. Fig. 126 is a diagram showing an example instruction setup screen. On this screen, an instruction execution condition is designated. The conditions are a job name, a device name, a user's name, a state as a trigger for executing an instruction (upon receipt of a job, during transmission, at the time of printing, upon a change in a status, etc.), an instruction effective time limit or period (including an infinite time), and a printer status. Furthermore, "AND" or "OR" can be also set for these conditions. The current setup is displayed as is "On receiving jobs from others", which is shown in Fig. 126.

When at step S7702 a process is selected, if "Take Action" is selected, at step S7704 an action is selected that is to be performed when the setup condition is established. The printing or the holding of a job can be selected. In addition, transmission (transfer) of a job or cancellation of a job may be selected. When "Set Notification" is selected, at step S7705 a notification is set. When "Add Instruction" is selected, at step S7706 the instruction set on the screen is validated. When "Delete" is selected, at

0947056 - 040498

step S7707 the instruction that is set on the screen is deleted. Then, at step S7708 the screen is returned to the main menu. An instruction whose effective period has expired remains in the history in addition to the jobs that have been executed. When a specific period of time has elapsed since the expiration of the time limit, the instruction is deleted in accordance with the management process for the history.

Fig. 78 is a flowchart showing the schedule change processing performed when "Reschedule" is selected on the main menu.

At step S7801 a schedule change screen is displayed to select a place, either a current device, another device or a desktop, whereat a job to be changed is present. Fig. 127 is a diagram showing an example menu for selecting a device whereat a job to be changed is present. When at step S7802 the current device ia selected, at step S7803 the list of jobs in the current device is displayed. Fig. 128 is a diagram showing an example screen for selecting a job that is to be rescheduled. At step S7804 a job to be changed is selected, and at step S7805 the schedule of the selected job is changed, as was explained in Fig. 59.

When another device or a desktop is selected as a place whereat a job to be changed is present, at step S7806 the address of the device is designated, at step S7807 the login screen is downloaded from the device at

0947056 - 1014

the address, and at step S7808 the login process is performed in accordance with the screen. When at step S7809 the login process is completed, since the login verb is "Reschedule", at step S7810 a menu screen in Fig. 128 for selecting a job to be rescheduled is downloaded to select a job, as explained in Fig. 51. To change the schedule of the printer, at step S7811 the remote rescheduling process, which will be described while referring to Fig. 79, is performed by the printer. To change the schedule for the desktop, at step S7812 the remote rescheduling process is performed by the desktop.

Fig. 79 is a flowchart showing the remote rescheduling processing performed when rescheduling of a job for another device (same type of printer) is selected on the main menu.

When there is a job in the device, at step S7902 the list of all the jobs is displayed, and at step S7903 a process is selected. When a job is selected and the rescheduling process is selected, at step S7905 a job rescheduling screen in Fig. 116 is displayed, and the selected job is rescheduled. This processing is performed in the same manner as is the rescheduling of the selected job for the current device, which was explained in Fig. 59. It should be noted that the list and the menu are downloaded from the device that is accessed.

When at step S7904 "Search" is selected, at step S7906 a search is made for a new job to be rescheduled. When "Logout" is selected, at step S7907 the logout processing explained in Fig. 52 is performed. When "Main Menu" is selected, at step S7908 the screen is returned to the display of the main menu.

Fig. 80 is a flowchart showing the processing for accessing another device. In Fig. 80 is shown the sequence of the processing performed when an access of another device or an access of a desktop is selected on the main menu. Fig. 81 is a diagram showing an example setup screen for accessing another device. At step S8001 the address of the device is designated, and at step S8002 the login screen is downloaded from the device at that address. At step S8003 the login process is performed in accordance with the downloaded screen. When at step S8004 the login process is completed, since the login verb is "Device", at step S8005 the initial menu screen in Fig. 106 is downloaded to determine a device to be operated, as explained in Fig. 51. When a printer is to be operated, at step S8006 the same process as is performed for the local printer is performed for the other printer. When a desktop is to be operated, at step S8007 the desktop processing is performed, which will be described later while referring to Fig. 82. When another device is to be operated, at step S8008 the process for that device

is performed.

Fig. 82 is a flowchart showing the desktop processing. In Fig. 82 are shown a shift from the initial screen and the sequence of the processing performed when "Goto My Desktop" is selected on the main menu. First, at step S8201 the main menu is displayed. Fig. 129 is a diagram showing an example desktop main menu. At step S8202 a process (action) is selected.

When at step S8202 "Fetch a File" is selected, at step S8204 the file printing process, which will be described later while referring to Fig. 88, is performed. When the acquisition of new mail is selected, at step S8205 the new mail reading processing, which will be described while referring to Fig. 83, is performed. When the acquisition of old mail is selected, at step S8206 the old mail acquisition processing, which will be described later while referring to Fig. 84, is performed. When the printing of a schedule is selected, at step S8207 the schedule is printed. When a reference to a schedule is selected, at step S8208 the schedule reference processing is performed. When a reference to an address book is selected, at step S8209 the address book reference processing is performed. When "Logout" is selected, at step S8210 the logout processing explained in Fig. 52 is performed.

Fig. 83 is a flowchart showing the new mail reading processing performed when a user accesses his or her desktop to read new mail. At step S8300 a list of new mail is displayed. Fig. 85 is a diagram showing an example new mail list. At step S8301 mail to be read is selected, and at step S8302 a process for the selected mail is selected.

When at step S8302 "Main Menu" is selected, at step S8304 the screen is returned to the main menu of the desktop. When "Open" is selected, at step S8305 the selected mail is opened and the contents of the mail are displayed. Fig. 86 is a diagram showing an example display for the contents of mail. When at step S8306 the preceding display or the succeeding display is selected, program control returns to step S8305 whereat the contents of corresponding mail are displayed. When "Print" or "Delete" is selected, mail is deleted at step S8308 or mail is printed at step S8309. Similarly, when at step S8302 "Print" or "Delete" is selected, mail is deleted at step S8308 or mail is printed at step S8309. When "Print All" is selected, at step S8310 all mail is printed. When "Old" (mail that has been read) is selected, the read mail acquisition processing, which will be described later while referring to Fig. 84, is performed.

During mail printing, a user accesses his or her desktop and obtains and prints mail. The printing

destination can be designated as in the previous job printing. For the printing of all the mail, a user accesses his or her desktop to obtain and print all the mail. For the deletion of mail, a user accesses his or her desktop to delete mail. At this time, as well as the deletion of a job, the confirmation of the deletion may be performed.

Fig. 84 is a flowchart showing the old mail acquisition processing performed when a user accesses his or her desktop to read old mail. At step S8401 a list for old mail is displayed. Fig. 87 is a diagram showing an example list of old mail. At step S8402 mail to be read is selected, and at step S8403 a process for the selected mail is selected.

When at step S8404 "Main Menu" is selected, at step S8405 the screen is returned to the main menu of the desktop. When "Open" is selected, at step S8406 the selected mail is opened and the contents are displayed. Fig. 86 is a diagram showing an example display of the contents of mail. When at step S8407 the preceding display or the succeeding display is selected, program control returns to step S8406 whereat the contents of corresponding mail are displayed. When "Print" or "Delete" is selected, mail is deleted at step S8409 or mail is printed at step S8410. Similarly, when at step S8404 "Print" or "Delete" is selected, mail is deleted at step S8409 or mail is

printed at step S8410. When "Unread" is selected, the new mail reading processing explained in Fig. 83 is performed.

Fig. 88 is a flowchart showing the file processing performed when a user accesses his or her desktop to operate a file on the desktop. At step S8801 setup is performed to obtain a file. Fig. 130 is a diagram showing an example setup screen for obtaining a file. On this screen the file name can be designated. At step S8802 a process to be performed to obtain a file is selected.

When at step S8802 "Search" is selected, at step S8803 a search condition is designated, at step S8804 a search is made for a file on the desktop, and at step S8805 a list for files that correspond to the setup condition is displayed. When at step S8802 "Show All" is selected, the list of the files in the desktop is displayed. Fig. 131 is a diagram showing an example display for the file list for the desktop. At step S8807 a file is selected from the search results or from the list. When the file is thus selected, or when at step S8802 the file name is entered to instruct the acquisition of the file, at step S8808 the pertinent file is obtained from the desktop. At step S8809 a process for this file is selected. Fig. 132 is a diagram showing an example screen for selecting a process corresponding to the obtained file. When

"Print" is selected, at step S8811 the obtained file is printed. When "Send" is selected, at step S8812 the obtained file is transmitted.

When Set Instruction on the main menu is selected (step S6410), an automatic process setup screen is displayed. Figs. 137A and 137B are flowcharts showing the processing that corresponds to the operation performed on the automatic process setup screen. Fig. 138 is a diagram showing an example automatic process setup screen.

In this embodiment, when an event occurs, such as the reception of a notification when another user performs printing, the printing of information when that information is received from a specific transmission source or the transmission of a notification to a user or to a manager when there is only a little toner remaining, a process to be performed under that condition is set as an instruction. Hereinafter, when an event that corresponds to a set condition occurs the designated process is performed, but an instruction need not be issued.

When the operator enters an instruction on the automatic process setup screen in Fig. 138 that is displayed by the client component, a request corresponding to the instruction is transmitted from the client to the server, which begins the automatic

process setup screen processing in Figs. 137A and 137B that corresponds to the operation screen currently displayed by the client.

When the automatic process setup screen processing is initiated, at step S13701 a request is obtained, at step S13702 it is analyzed, and at step S13703 program control branches to a corresponding process.

When On Receiving (at the time of reception), While Sending Jobs (during transmission), On Printing (at the time of printing) and Device Status Change (a change in the status of a device) are requested, at step S13706 a screen HTML page is created as a setup screen for a process to be performed under each requested condition. At step S13707 the HTML page is transmitted to the client and the processing is terminated.

When Delete is requested, at step S13704 an instruction designated by the client is deleted, and at step S13705 a screen HTML page for the updated instruction list is created. At step S13707 the HTML page is transmitted to the client and the processing is thereafter terminated.

When Done is requested, at step S13708 the currently designated automatic process setup parameters are set. At step S13709 the preceding screen HTML page is created and at step S13707 it is transmitted to the client. The processing is thereafter terminated.

When Cancel is requested, at step S13709 the preceding HTML page is created, and at step S13710 it is transmitted to the client. The processing is thereafter terminated.

For the other requests, at step S13711 the post-Login, general request process, which corresponds to the request that is commonly selected on a series of screens following Login, is performed, and the processing is thereafter terminated.

Figs. 139A and 139B are flowcharts showing the automatic reception setup screen processing that corresponds to the operation performed on an automatic reception setup screen displayed when On Receiving Jobs on the automatic process setup screen is selected. Figs. 140 and 141 are diagrams showing example automatic reception setup screens. The screen in Fig. 141 is obtained by scrolling the screen in Fig. 140.

When the operator enters an instruction on the automatic reception setup screen in Figs. 140 and 141 displayed by the client component, a request corresponding to the instruction is transmitted by the client to the server, which begins the automatic reception setup screen processing in Figs. 139A and 139B that corresponds to the operation screen currently displayed by the client.

When the automatic reception setup screen processing is initiated, at step S13901 a request is

obtained, at step S13902 it is analyzed, and at step S13903 program control branches to a corresponding process.

On the screen in Fig. 140, Sender (a sender), Source Device (a transmission source device), Job Name (the name of a job), and Printer Status (the status of a printer) can be designated as conditions. On the screen in Fig. 141, a start date and an end date (Valid from, to) for validating a set command can be designated, and a period (Valid for) can also be designated. These entries are made at the client.

When Notify and Take Action are requested as processes to be executed, at step S13907 a screen HTML page is created as a setup screen for a notification or for an action to be performed upon reception. At step S13908 the HTML page is transmitted to the client and the processing is terminated.

When Add is requested, at step S13904 an instruction designated by the client is added, and at step S13905 a screen HTML page for the updated instruction list is created. At step S13908 the HTML page is transmitted to the client, and the processing is thereafter terminated.

When Delete is requested, at step S13906 an instruction designated by the client is deleted, and at step S13905 a screen HTML page for the updated instruction list is created. At step S13908 the HTML

page is transmitted to the client and the processing is thereafter terminated.

When Set is requested, at step S13909 the currently designated instructions are set. At step S13910 the preceding screen HTML page is created and at step S13911 it is transmitted to the client. The processing is thereafter terminated.

When Cancel is requested, at step S13910 the preceding HTML page is created, and at step S13911 it is transmitted to the client. The processing is thereafter terminated.

For the other requests, at step S13912 the post-Login, general request process, which corresponds to the request that is commonly selected for a series of screens following Login, is performed, and the processing is thereafter terminated.

Fig. 142 is a flowchart showing the action setup screen processing that corresponds to the operation performed on an action setup screen displayed when Take Action is selected on the various automatic process setup screens. Fig. 143 is a diagram showing an example action setup screen.

When the operator enters an instruction on the action setup screen in Fig. 143 displayed by the client component, a request corresponding to the instruction is transmitted by the client to the server, which begins the action setup screen processing in Fig. 142

that corresponds to the operation screen currently displayed by the client.

It should be noted, however, that the input operations for the setting of Action To Take (the type of action), Device Name (the name of a device), Device Address (the address of a device) and Password (a password) are completed by using client processing, without the server processing in Fig. 142 being required. Since the OK, Cancel and the other operations require the server processing, the action setup screen processing in Fig. 142 is performed.

Printing and holding can be designated as the type of action, and a device to execute the action is designated by using the device name and address. When another device is designated, the transmission process is accompanied by the designated action. A password is used to limit access at the transmission source.

When the action setup screen processing is initiated, at step S14201 a request is obtained, at step S14202 it is analyzed, and at step S14203 program control branches to a corresponding process.

When OK is requested, at step S14204 the action setup parameters are set for Action To Take, Device Name, Device Address and Password that were designated by the client. At step S14205 the preceding HTML page is created, and at step S14206 it is transmitted to the client. The processing is thereafter terminated.

When Cancel is requested, at step S14205 the preceding HTML page is created, and at step S14206 it is transmitted to the client. The processing is thereafter terminated.

For the other requests, at step S14207 the post-Login, general request process, which corresponds to the request that is commonly selected on a series of screens following Login, is performed, and the processing is thereafter terminated.

When with the action setup in this processing a job that matches a specific condition is received, an automatic process, such as using another printer to print the job, can be set.

Similarly, a notification destination and the contents of the notification are set when Notify is selected.

Figs. 144A and 144B are flowcharts showing the automatic status change setup screen processing that corresponds to an operation on an automatic status change setup screen, which is displayed when Device Status change is selected on the automatic process setup screen.

When the operator enters an instruction on the automatic status change setup screen displayed by the client component, a request corresponding to the instruction is transmitted from the client to the server, which begins the automatic status change setup

screen processing in Figs. 144A and 144B that corresponds to the operation screen currently displayed by the client.

When the automatic status change setup screen processing is initiated, at step S14401 a request is obtained, at step S14402 it is analyzed, and at step S14403 program control branches to a corresponding process.

When Notify is requested, at step S14407 a screen HTML page that corresponds to a request is created, and at step S14408 it is transmitted to the client. The processing is thereafter terminated.

When Add is requested, at step S14404 an instruction designated by the client is added, and at step S14405 a screen HTML page for the updated instruction list is created. At step S14408 the HTML page is transmitted to the client and the processing is thereafter terminated.

When Delete is requested, at step S14406 an instruction designated by the client is deleted, and at step S14405 a screen HTML page for the updated instruction list is created. At step S14408 the HTML page is transmitted to the client and the processing is thereafter terminated.

When Set is requested, at step S14409 the currently designated instructions are set. At step S14410 the preceding screen HTML page is created and at

step S14411 it is transmitted to the client. The processing is thereafter terminated.

When Cancel is requested, at step S14410 the preceding HTML page is created, and at step S14411 it is transmitted to the client. The processing is thereafter terminated.

For the other requests, at step S14412 the post-Login, general request process, which corresponds to the request that is commonly selected on a series of screens following Login, is performed, and the processing is thereafter terminated.

When either While Sending Jobs or On Printing is selected, on the automatic process setup screen in Fig. 138, a different setup screen is displayed: for While Sending Job the setup screen for a recipient, a receiver and the name of a job is displayed; and for On Printing the setup screen for a printing instructor (sender), a transmitter and the name of a job is displayed. However, since the processing is performed substantially in the same manner as explained above, no explanation for them will be given.

According to the above described embodiment, each time the status is changed to one that is specified, a specific process can be performed without an instruction being issued.

The present invention may be applied for an apparatus constituted by a single device, or for a

system constituted by a plurality of apparatuses. For implementing the present invention, a memory medium on which is stored software program code for implementing the functions in the above embodiment may be supplied to an apparatus or to a system, and the computer in the apparatus or in the system may read the program code from the memory medium.

In addition, the scope of the present invention includes not only a case where the functions in the embodiment can be performed when program code is read and executed by the computer, but also a case where, in accordance with an instruction in the program code, an OS running on the computer, etc., can perform the processing required to accomplish the functions included in the above embodiment.

The memory medium on which such program code is recorded constitutes the present invention.

Although the present invention has been described in its preferred form with a certain degree of particularity, many apparently widely different embodiments of the invention can be made without departing from the spirit and the scope thereof. It is to be understood that the invention is not limited to the specific embodiments described herein, except as defined in the appended claims.

EP 1 045 345 A2

WHAT IS CLAIMED IS:

1. An information processing apparatus comprising:

attribute designation means for designating an attribute of object information;

process designation means for designating a process for said object information;

setup means for setting up a command to be executed; and

execution means for executing said command set up by said setup means upon the performance of said process designated by said process designation means for said object information having said attribute designated by said attribute designation means.

2. An information processing apparatus according to claim 1, further comprising:

time limit setup means for setting a time limit; and

inhibition means for inhibiting said execution means for executing a command when said time limit set by said time limit setup means has expired.

3. An information processing apparatus according to claim 1, further comprising:

status designation means for designating the status of said apparatus; and

0047056 - 19-07-82

permission means for permitting said execution means to execute a command when said status designated by said status designation means is established.

4. An information processing apparatus according to claim 1, wherein said attribute of said object information includes at least one of an information name, an information transmitter name, and an information sender name.

5. An information processing apparatus according to claim 1, wherein said process includes at least one of the reception, of the transmission, and of the printing of said object information.

6. An information processing apparatus according to claim 1, wherein said command includes a command for issuing a notification that said designated process has been completed.

7. An information processing apparatus according to claim 1, wherein said command includes a command for performing a further process related to said object information.

8. An information processing apparatus according to claim 7, wherein said further process includes at

least one of the printing or of the holding of said object information.

9. An information processing apparatus according to claim 2, further comprising:

management means for deleting a command set by said setup means when said time limit set by said time limit setup means has expired.

10. An information processing method comprising:

an attribute designation step of designating an attribute of object information;

a process designation step of designating a process for said object information;

a setup step of setting up a command to be executed; and

an execution step of executing said command set up at said setup step upon the performance of said process designated at said process designation step for said object information having said attribute designated at said attribute designation step.

11. An information processing method according to claim 10, further comprising:

a time limit setup step of setting a time limit; and

an inhibition step of inhibiting the execution of

a command at said execution step when said time limit set at said time limit setup step has expired.

12. An information processing method according to claim 10, further comprising:

a status designation step of designating the status of an apparatus; and

a permission step of permitting the execution of a command at said execution step when said status designated at said status designation step is established.

13. An information processing method according to claim 10, wherein said attribute of said object information includes at least one of an information name, an information transmitter name, and an information sender name.

14. An information processing method according to claim 10, wherein said process includes at least one of the reception, of the transmission, and of the printing of said object information.

15. An information processing method according to claim 10, wherein said command includes a command for issuing a notification that said designated process has been completed.

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16. An information processing method according to claim 10, wherein said command includes a command for performing a further process related to said object information.

17. An information processing method according to claim 16, wherein said further process includes at least one of the printing or of the holding of said object information.

18. An information processing method according to claim 10, further comprising:

a management step of deleting a command set at said setup step when said time limit set at said time limit setup step has expired.

19. A storage medium on which is stored a program, which comprises:

an attribute designation step of designating an attribute of object information;

a process designation step of designating a process for said object information;

a setup step of setting up a command to be executed; and

an execution step of executing said command set up at said setup step upon the performance of said process designated at said process designation step for said

object information having said attribute designated at said attribute designation step.

20. An information processing apparatus comprising:

designation means for designating a status that is employed as an execution condition for a process to be performed;

setup means for setting up, together with said status, said process that is to be performed when said status designated by said designation means has occurred;

determination means for determining whether said status designated by said designation means has occurred; and

execution means for, when the occurrence of said status is determined by said determination means, performing said process that is set up with said status.

21. An information processing apparatus according to claim 20, further comprising:

time period setup means for setting an effective time period; and

inhibition means for inhibiting said execution means from executing a command at a time other than said time period set by said time period setup means.

22. An information processing apparatus according to claim 20, wherein said designation means designates a status during which a specific process is to be performed.

23. An information processing apparatus according to claim 20, wherein at least one of the reception, of the transmission, and of the printing can be designated as the type for said specific process.

24. An information processing apparatus according to claim 23, wherein at least one of a user name, of an apparatus, and of a process name can be designated as an attribute for said specific process.

25. An information processing apparatus according to claim 20, wherein said designation means designates a specific status for said apparatus.

26. An information processing apparatus according to claim 20, wherein a failure of each section of said apparatus, or a shortage of each resource is capable of being designated as said specific status.

27. An information processing apparatus according to claim 20, wherein said setup means is capable of setting, as said process to be executed, at least one

0247056 <EP1450

of a notification, of a printing, and of a holding process.

28. An information processing apparatus according to claim 20, that is capable of executing, at the least, either the reading or the printing of information.

29. An information processing method comprising:

a designation step of designating a status that is employed as an execution condition for a process to be performed;

a setup step of setting up, together with said status, said process that is to be performed when said status designated at said designation step has occurred;

a determination step of determining whether said status designated at said designation step has occurred; and

an execution step of, when the occurrence of said status is determined at said determination step, performing said process that is set up with said status.

30. An information processing method according to claim 29, further comprising:

a time period setup step of setting an effective

time period; and

an inhibition step of inhibiting the execution of a command at said execution step at a time other than said time period set at said time period setup step.

31. An information processing method according to claim 29, wherein a status during which a specific process is to be performed is designated at said designation step.

32. An information processing method according to claim 29, wherein at least one of the reception, of the transmission, and of the printing is capable of being designated as the type for said specific process.

33. An information processing method according to claim 32, wherein at least one of a user name, of an apparatus, and of a process name is capable of being designated as an attribute for said specific process.

34. An information processing method according to claim 29, wherein a specific status for an apparatus is designated at said designation step.

35. An information processing method according to claim 29, wherein a failure of each section of an apparatus, or a shortage of each resource is capable of

being designated as said specific status.

36. An information processing method according to claim 29, wherein at said setup step, at least one of a notification, of a printing, and of a holding process is capable of being set as said process to be executed.

37. An information processing method according to claim 29, whereby at the least, either the reading or the printing of information is capable of being executed.

38. A storage medium on which is stored a program, which comprises:

a designation step of designating a status that is employed as an execution condition for a process to be performed;

a setup step of setting up, together with said status, said process that is to be performed when said status designated at said designation step has occurred;

a determination step of determining whether said status designated at said designation step has occurred; and

an execution step of, when the occurrence of said status is determined at said determination step, performing said process that is set up with said

EP 0 967 554 A1

status.

39. An information processing apparatus comprising:

execution means for performing a process for object information to be processed;

notification destination designation means for designating a destination for a notification related to said object information;

trigger setup means for setting a trigger for said notification;

time setup means for setting a time period extending from the time at which said trigger for said notification is tripped until said notification is issued; and

notification means for, when said time period that is set by said time setup means has elapsed since said trigger for said notification that is set by said trigger setup means has been tripped, issuing a notification to said notification source that is designated by said notification destination means.

40. An information processing apparatus according to claim 39, further comprising:

notification medium selection means for selecting a notification medium related to said object information,

EP 0 967 556 A2

wherein said notification means issues a notification using said notification medium selected by said notification medium selection means.

41. An information processing apparatus according to claim 39, wherein said execution means prints said object information.

42. An information processing apparatus according to claim 39, wherein said execution means transmits said object information.

43. An information processing apparatus according to claim 39, wherein a trigger for said notification is a successful conclusion of the processing for said object information.

44. An information processing apparatus according to claim 39, wherein a trigger for said notification is the failure of the processing for said object information.

45. An information processing apparatus according to claim 39, further comprising:

reception means for receiving object information to be processed;

object information storage means for storing said

EP 0 704 796 A2

object information received by said reception means; and

access means for accessing said object information stored in said object information storage means,

wherein said trigger for said notification is an access effected by said access means.

46. An information processing apparatus according to claim 45, wherein said trigger for said notification is an access effected by said access means to transmit said object information.

47. An information processing apparatus according to claim 45, wherein said trigger for said notification is an access effected by said access means to print said object information.

48. An information processing apparatus according to claim 45, wherein said trigger for said notification is an access effected by said access means to delete said object information.

49. An information processing apparatus according to claim 39, further comprising:

list display means for displaying a list of setup contents for a plurality of said notifications.

50. An information processing method comprising:

an execution step of performing a process for object information to be processed;

a notification destination designation step of designating a destination for a notification related to said object information;

a trigger setup step of setting a trigger for said notification;

a time setup step of setting a time period extending from the time at which said trigger for said notification is tripped until said notification is issued; and

a notification step of, when said time period that is set at said time setup step has elapsed since said trigger for said notification that is set at said trigger setup step has been tripped, issuing a notification to said notification source that is designated at said notification destination step.

51. An information processing method according to claim 50, further comprising:

a notification medium selection step of selecting a notification medium related to said object information,

wherein at said notification step a notification is issued using said notification medium selected at said notification medium selection step.

09705956 - 101498

52. An information processing method according to claim 50, wherein said object information is printed at said execution step.

53. An information processing method according to claim 50, wherein said object information is transmitted at said execution step.

54. An information processing method according to claim 50, wherein a trigger for said notification is a successful conclusion of the processing for said object information.

55. An information processing method according to claim 50, wherein a trigger for said notification is the failure of the processing for said object information.

56. An information processing method according to claim 50, further comprising:

a reception step of receiving object information to be processed;

an object information storage step of storing said object information received at said reception step; and

an access step of accessing said object information stored at said object information storage step,

wherein said trigger for said notification is an access effected at said access step.

57. An information processing method according to claim 56, wherein said trigger for said notification is an access effected at said access step to transmit said object information.

58. An information processing method according to claim 56, wherein said trigger for said notification is an access effected at said access step to print said object information.

59. An information processing method according to claim 56, wherein said trigger for said notification is an access effected at said access step to delete said object information.

60. An information processing method according to claim 50, further comprising:

a list display step of displaying a list of setup contents for a plurality of said notifications.

61. A storage medium on which is stored a program, which comprises:

an execution step of performing a process for object information to be processed;

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a notification destination designation step of designating a destination for a notification related to said object information;

a trigger setup step of setting a trigger for said notification;

a time setup step of setting a time period extending from the time at which said trigger for said notification is tripped until said notification is issued; and

a notification step of, when said time period that is set at said time setup step has elapsed since said trigger for said notification that is set at said trigger setup step has been tripped, issuing a notification to said notification source that is designated at said notification destination step.

EP 0 954 795 B1

ABSTRACT OF THE DISCLOSURE

An attribute of object information to be processed and a corresponding process are designated, and a command to be executed is set. When the process designated for the object information having the designated attribute is performed, the command that is set is executed. Further, a status that is employed as a process execution condition is designated, and a corresponding process that is to be performed while the status corresponds to that of the designated status is stored with that status. Then, when it is determined that the current status is the designated status, the corresponding process is performed, and thus, each time a specific event occurs, a corresponding process can be performed without an instruction having to be issued. Specifically, a trigger for the issuance of a notification is set, and a time period extending from the time the trigger is tripped until the notification is issued is designated. When the designated time has elapsed following the tripping of the trigger for the notification issuance, the notification is issued to a designated destination.

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FIG. 1

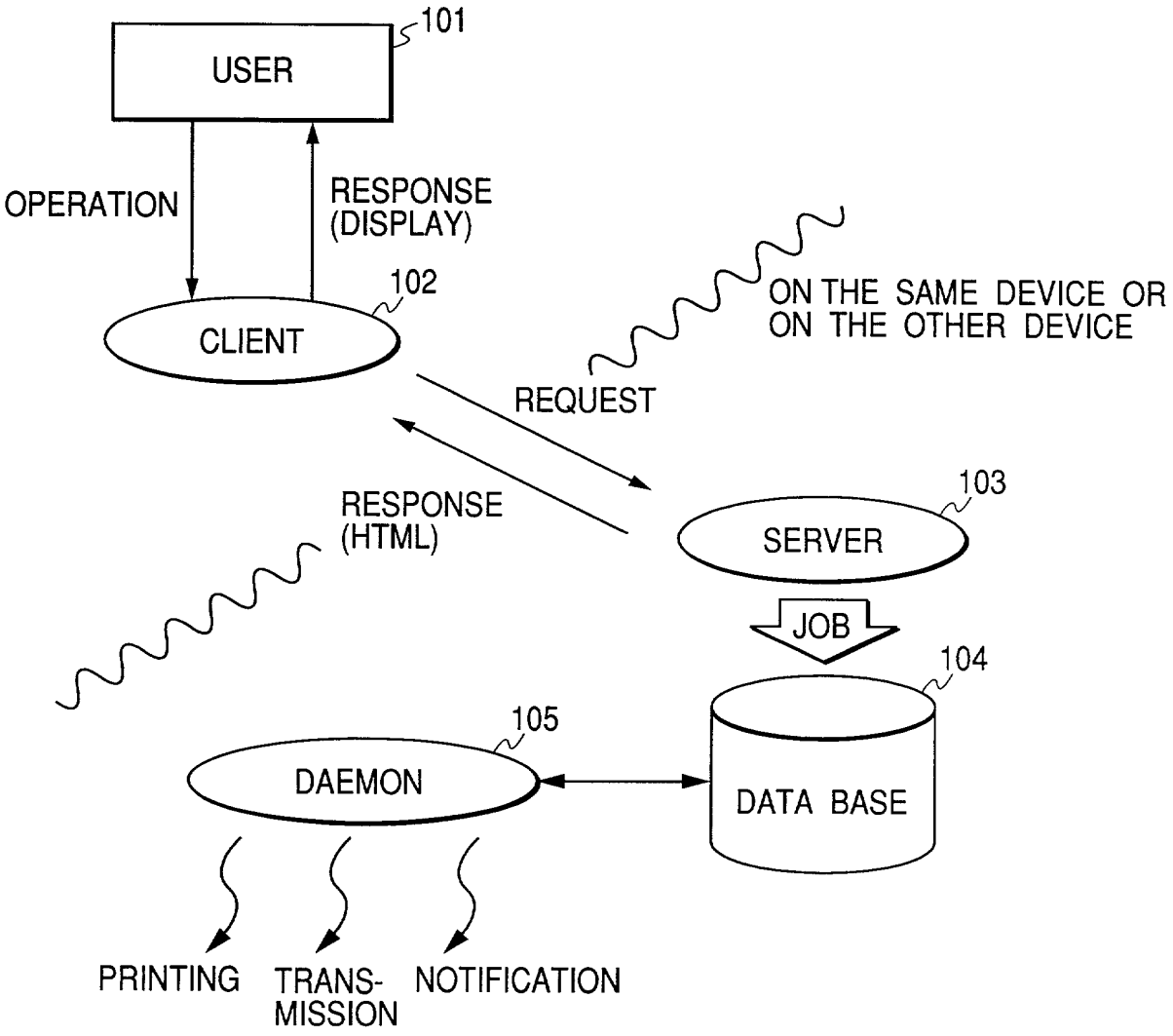
101
USER
OPERATION
RESPONSE
(DISPLAY)
102
CLIENT
ON THE SAME DEVICE OR
ON THE OTHER DEVICE
REQUEST
RESPONSE
(HTML)
103
SERVER
JOB
104
105
DAEMON
DATA BASE
PRINTING
TRANS-
MISSION
NOTIFICATION

FIG. 2

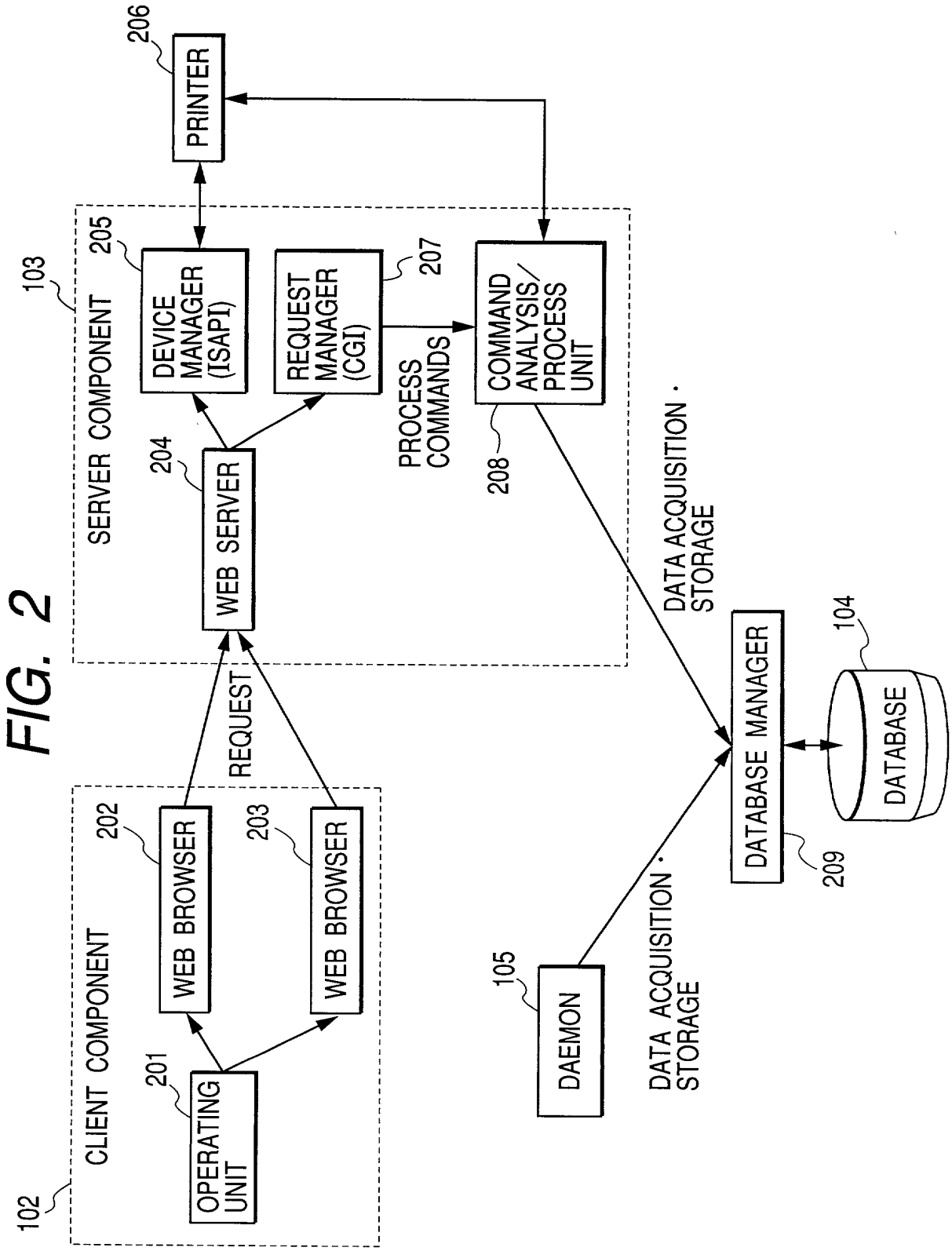
102
CLIENT COMPONENT
201
OPERATING UNIT
202
WEB BROWSER
203
WEB BROWSER
REQUEST
103
SERVER COMPONENT
204
WEB SERVER
205
DEVICE MANAGER (ISAPI)
207
REQUEST MANAGER (CGI)
PROCESS COMMANDS
208
COMMAND ANALYSIS/ PROCESS UNIT
206
PRINTER
DATA ACQUISITION · STORAGE
105
DAEMON
DATA ACQUISITION · STORAGE
DATABASE MANAGER
209
104
DATABASE

FIG. 3

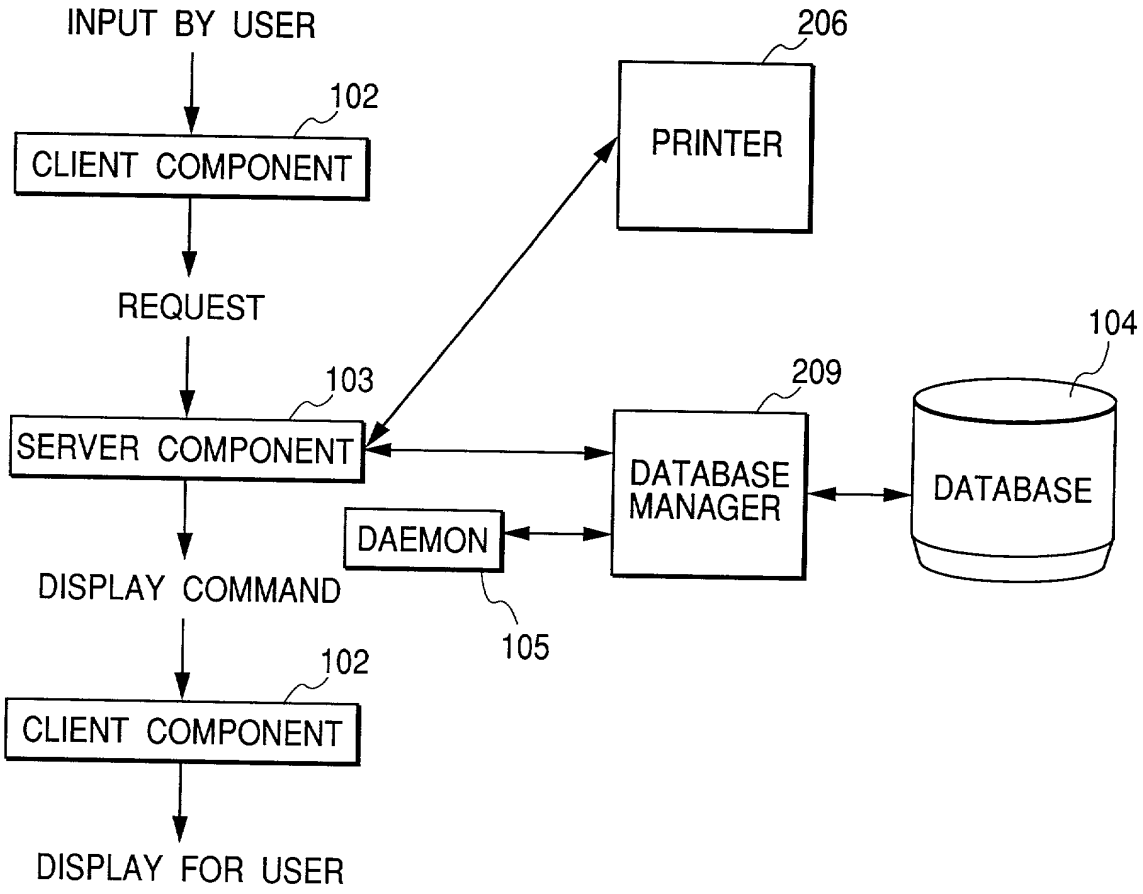
INPUT BY USER
102
CLIENT COMPONENT
REQUEST
103
SERVER COMPONENT
DISPLAY COMMAND
102
CLIENT COMPONENT
DISPLAY FOR USER
206
PRINTER
209
DATABASE MANAGER
DAEMON
105
104
DATABASE

FIG. 4

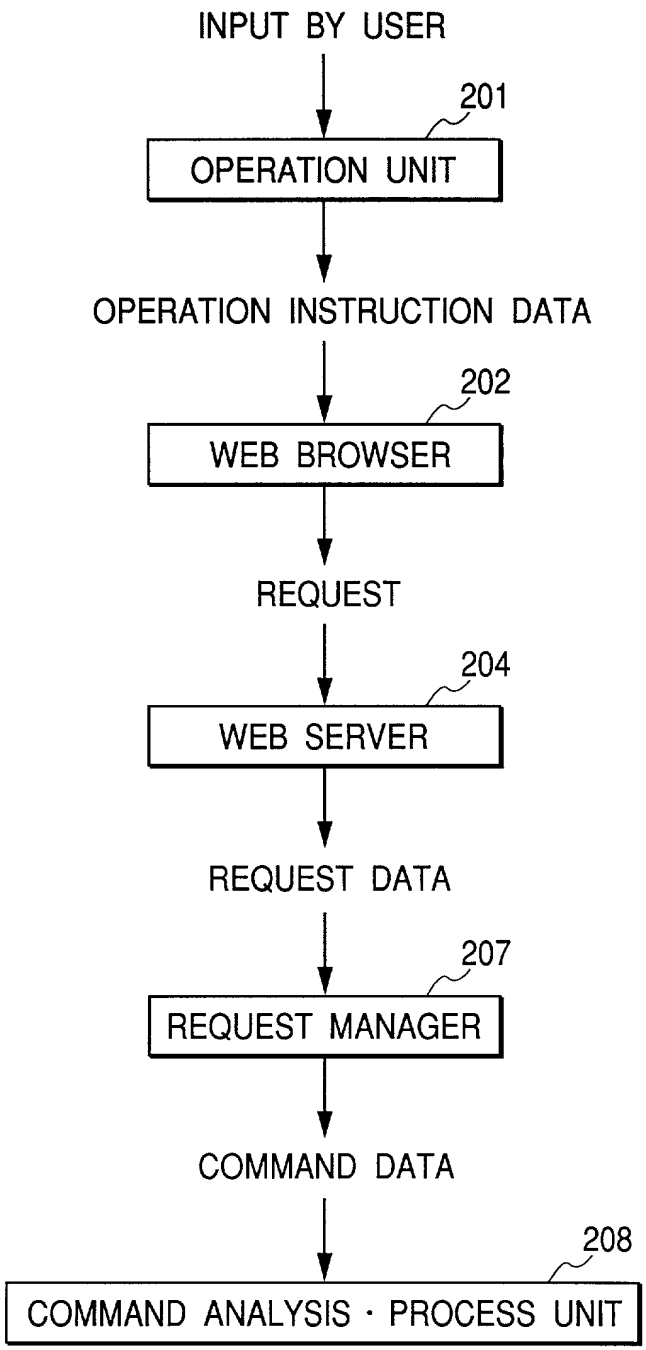

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FIG. 5

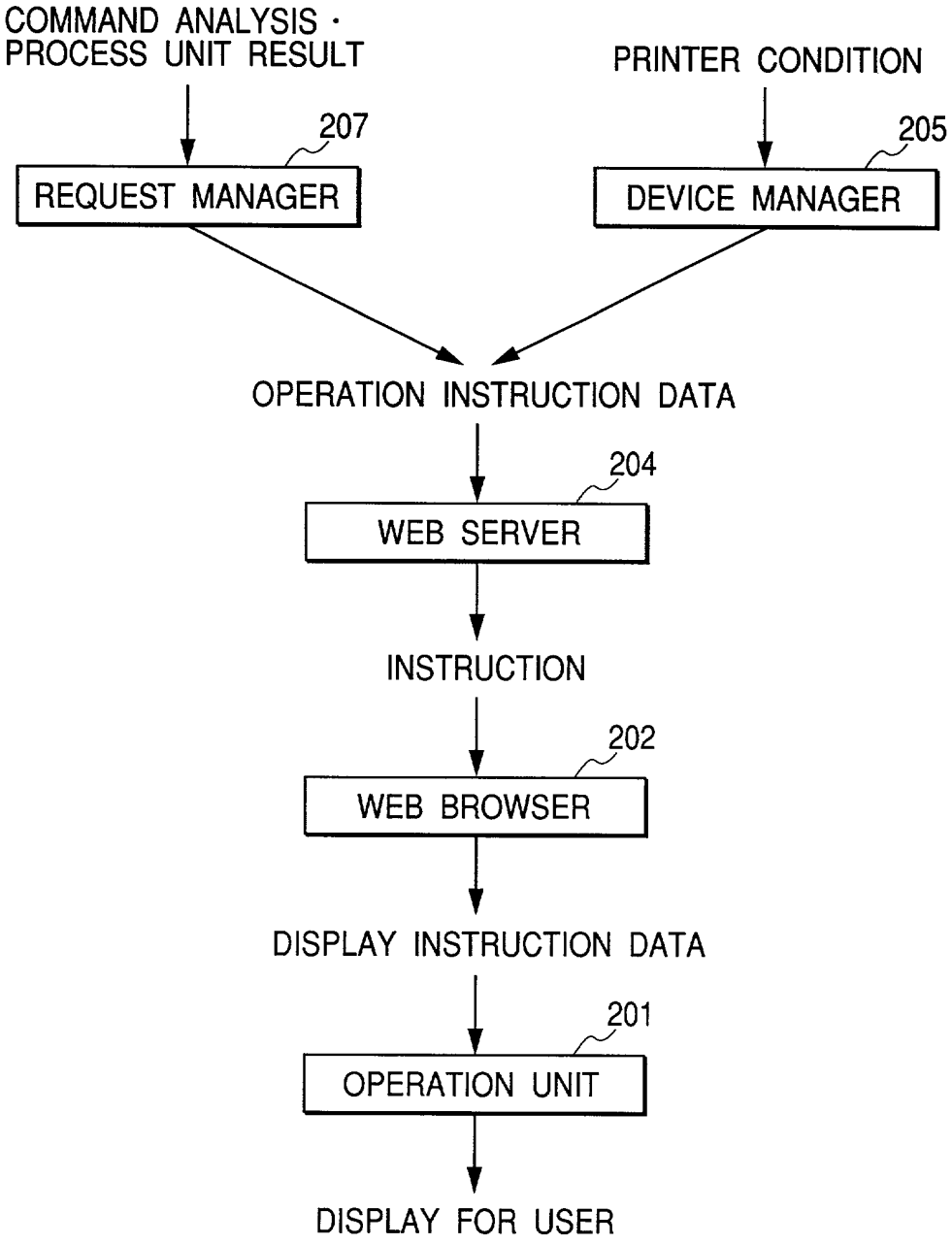
COMMAND ANALYSIS · PROCESS UNIT RESULT
PRINTER CONDITION
207
205
REQUEST MANAGER
DEVICE MANAGER
OPERATION INSTRUCTION DATA
204
WEB SERVER
INSTRUCTION
202
WEB BROWSER
DISPLAY INSTRUCTION DATA
201
OPERATION UNIT
DISPLAY FOR USER

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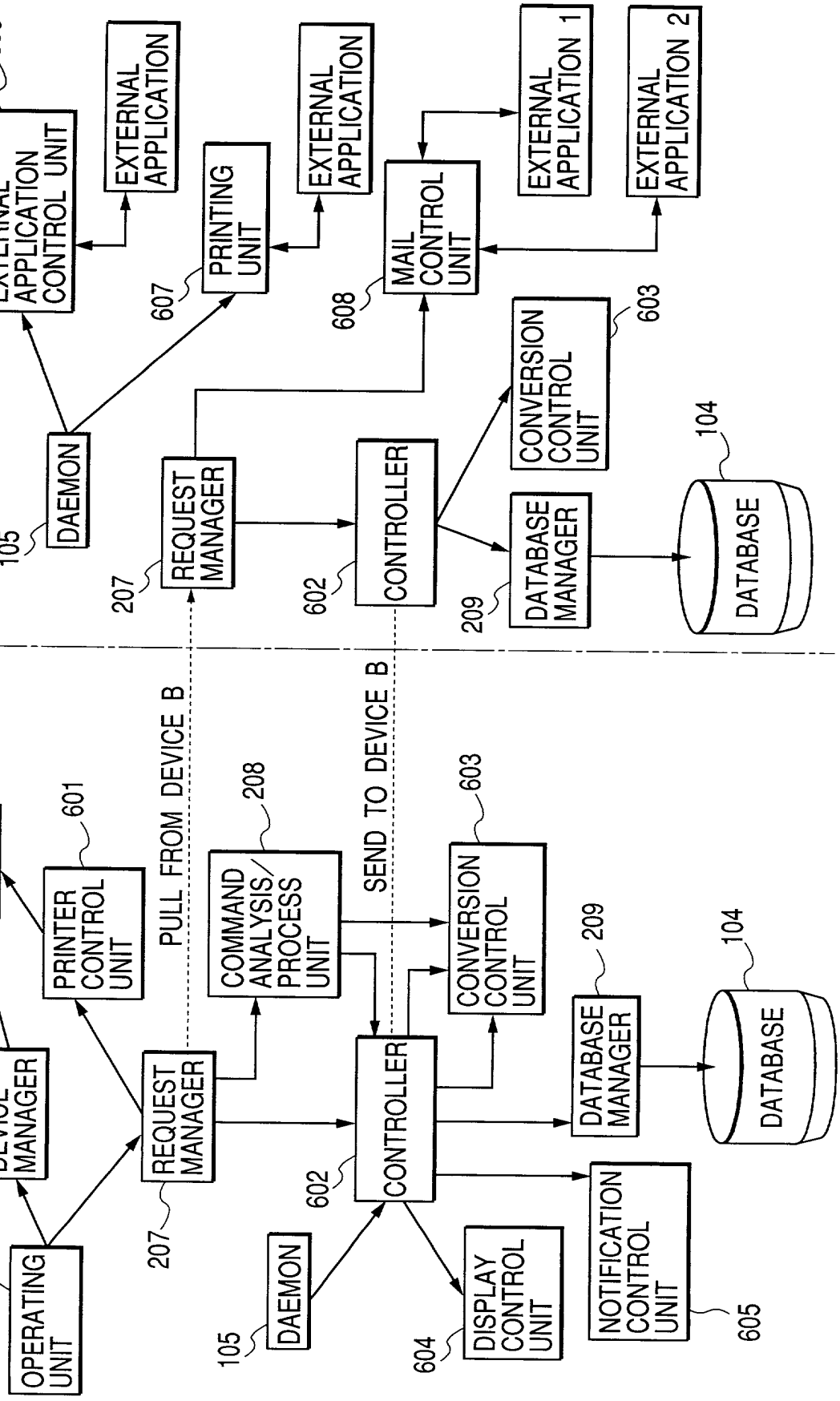
FIG. 6



EP 1 705 568 A1 2006-09-27

FIG. 7

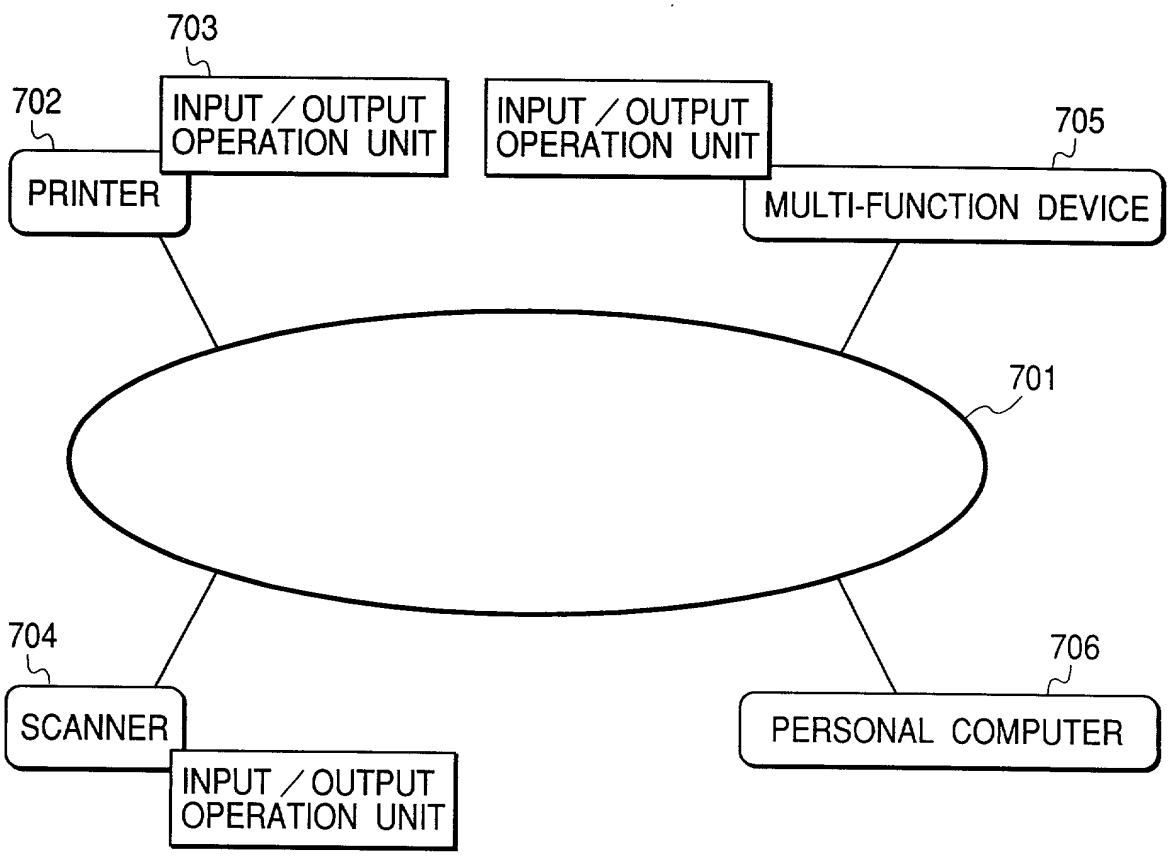


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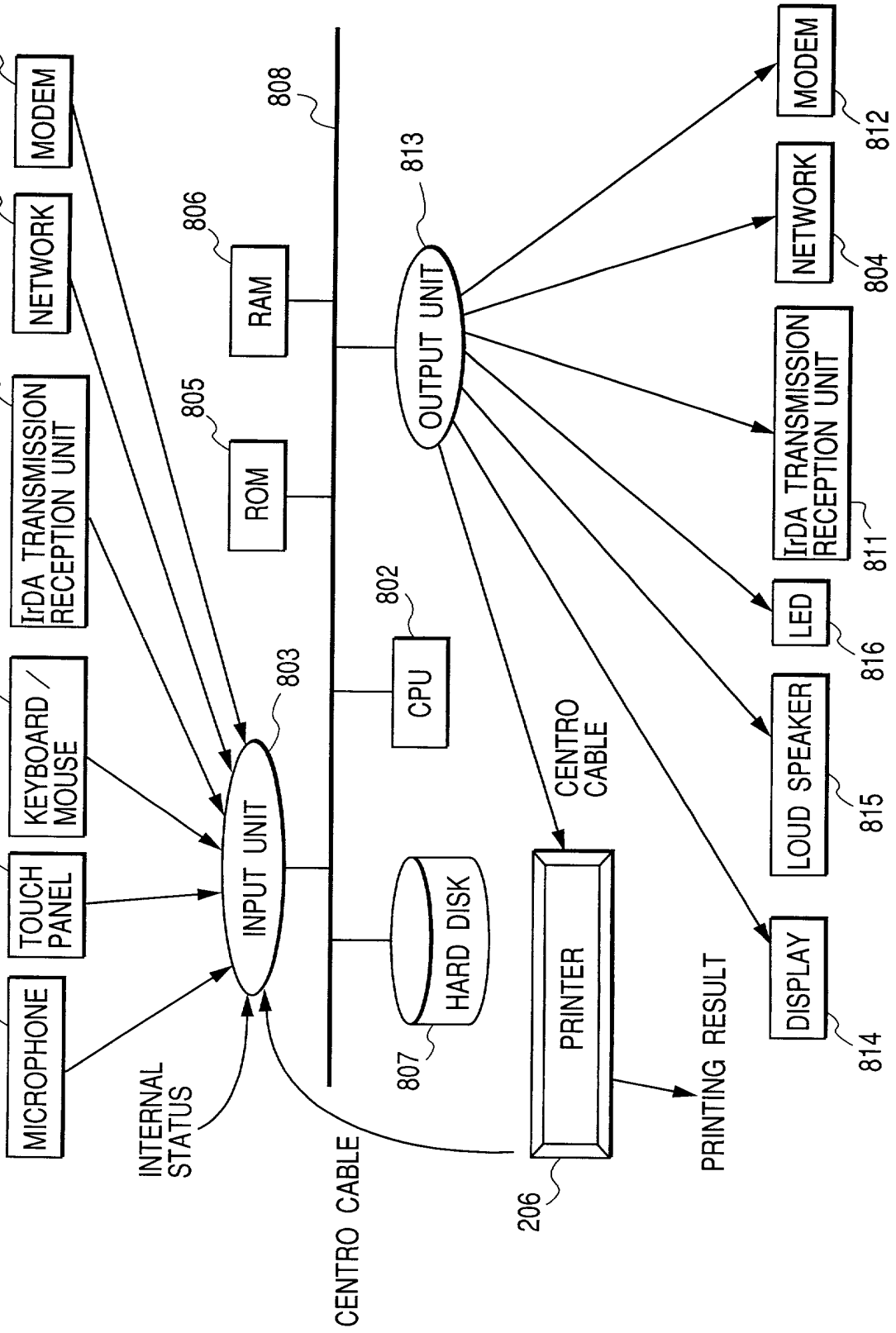
FIG. 8



EP 1 647 896 A2

FIG. 9

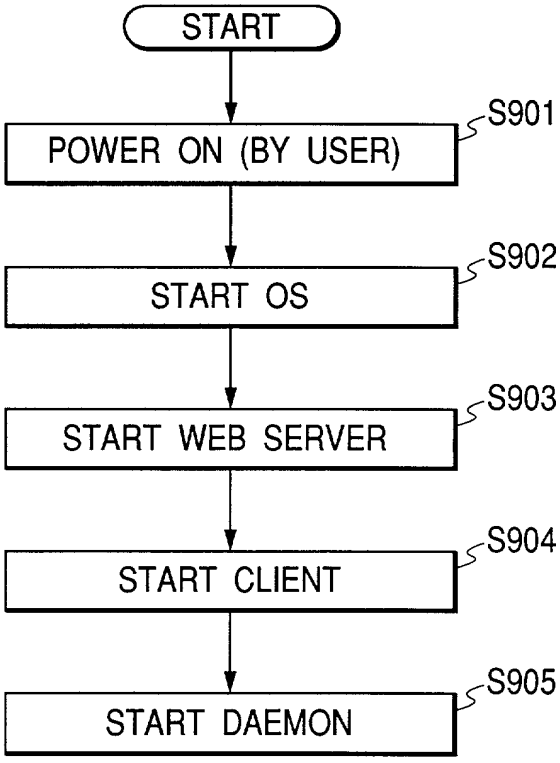


FIG. 10

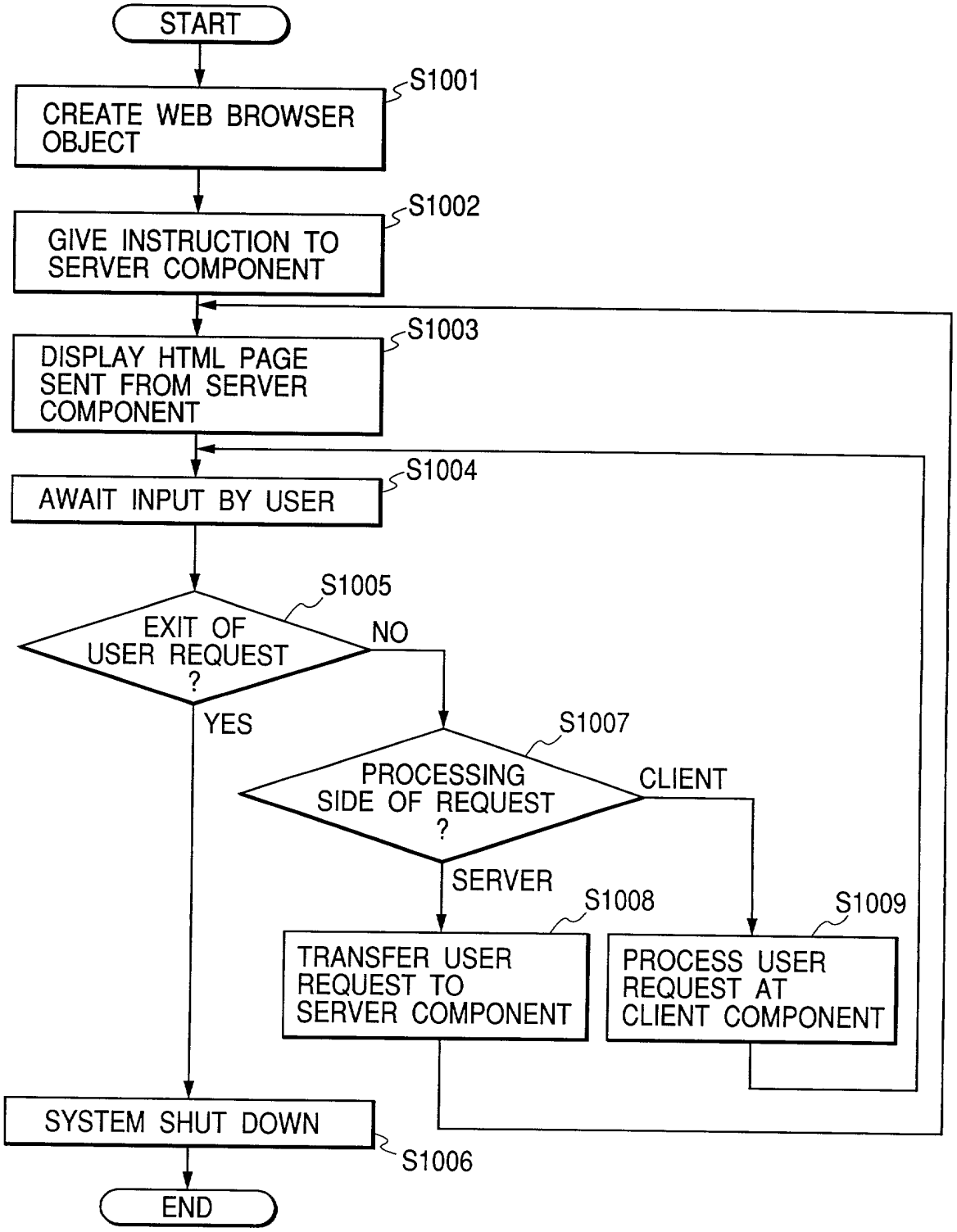

START
CREATE WEB BROWSER OBJECT
S1001
GIVE INSTRUCTION TO SERVER COMPONENT
S1002
DISPLAY HTML PAGE SENT FROM SERVER COMPONENT
S1003
AWAIT INPUT BY USER
S1004
EXIT OF USER REQUEST ?
S1005
NO
YES
PROCESSING SIDE OF REQUEST ?
S1007
CLIENT
SERVER
TRANSFER USER REQUEST TO SERVER COMPONENT
S1008
PROCESS USER REQUEST AT CLIENT COMPONENT
S1009
SYSTEM SHUT DOWN
S1006
END

FIG. 11

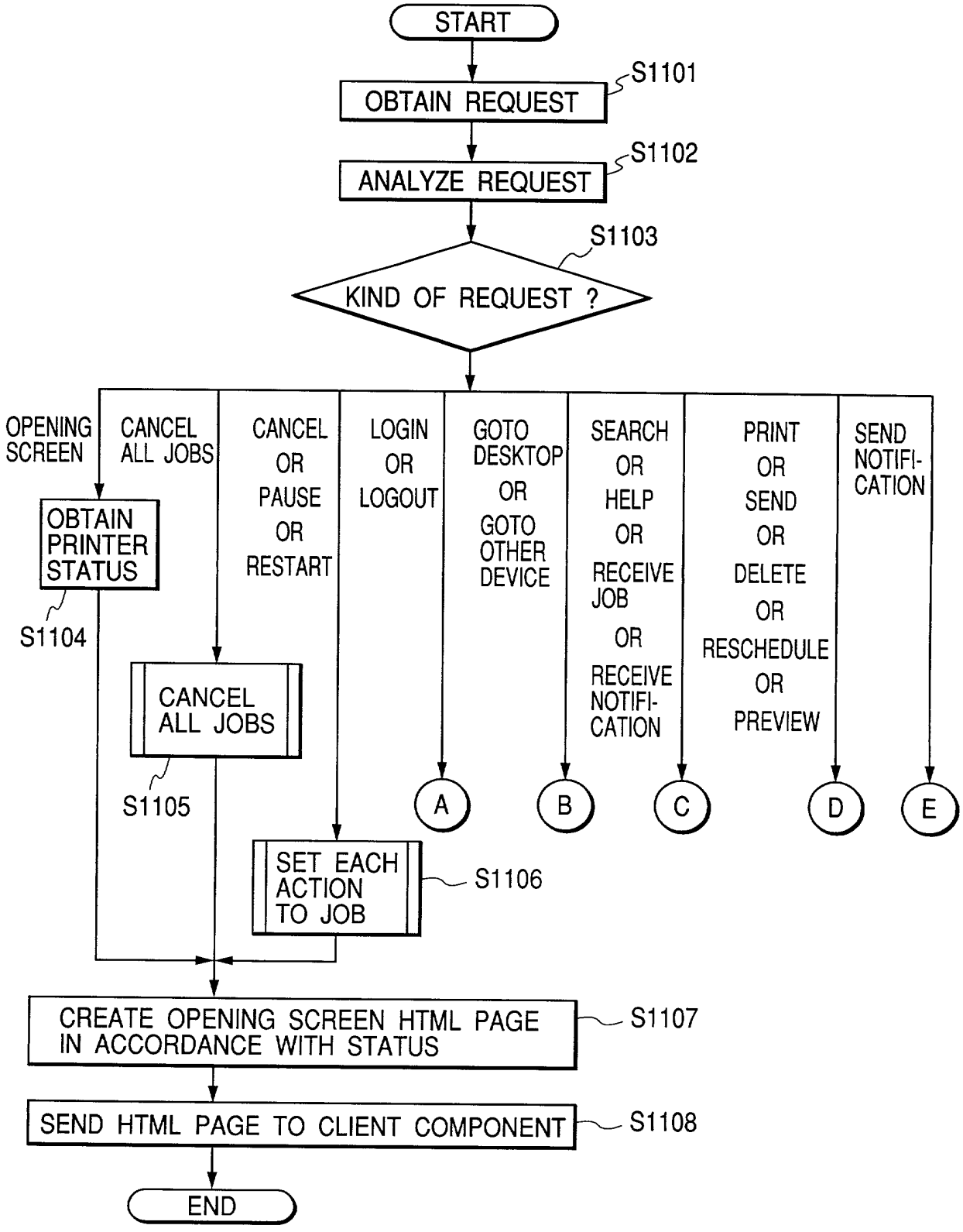

START
OBTAIN REQUEST
S1101
ANALYZE REQUEST
S1102
KIND OF REQUEST ?
S1103
OPENING SCREEN
CANCEL ALL JOBS
CANCEL OR PAUSE OR RESTART
LOGIN OR LOGOUT
GOTO DESKTOP OR GOTO OTHER DEVICE
SEARCH OR HELP OR RECEIVE JOB OR RECEIVE NOTIFI-CATION
PRINT OR SEND OR DELETE OR RESCHEDULE OR PREVIEW
SEND NOTIFI-CATION
OBTAIN PRINTER STATUS
S1104
CANCEL ALL JOBS
S1105
A
B
C
D
E
SET EACH ACTION TO JOB
S1106
CREATE OPENING SCREEN HTML PAGE IN ACCORDANCE WITH STATUS
S1107
SEND HTML PAGE TO CLIENT COMPONENT
S1108
END

FIG. 12

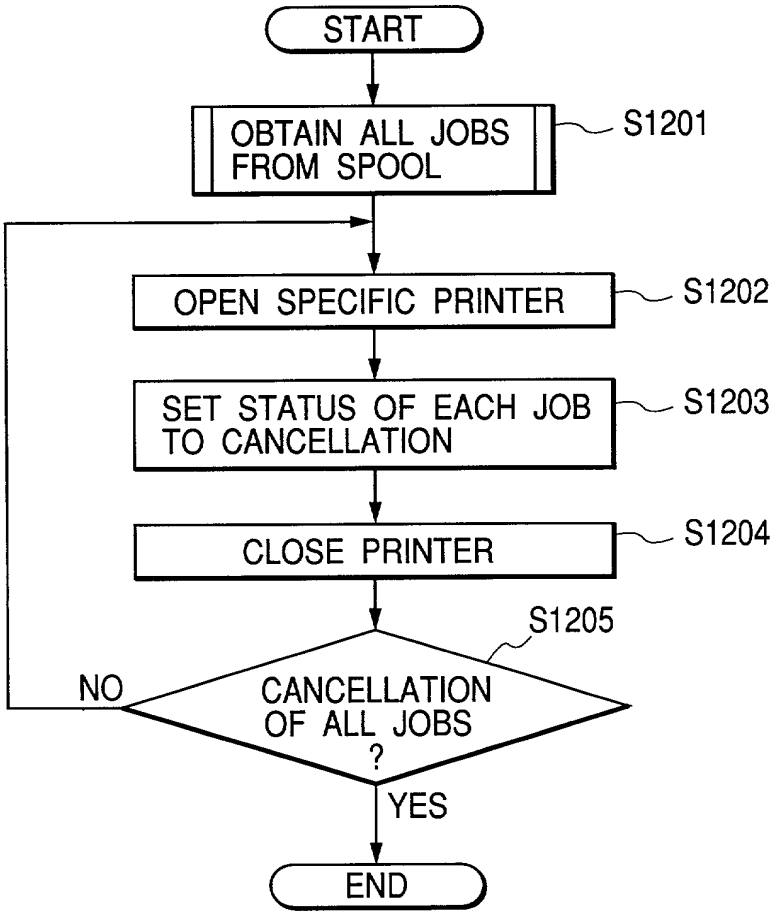
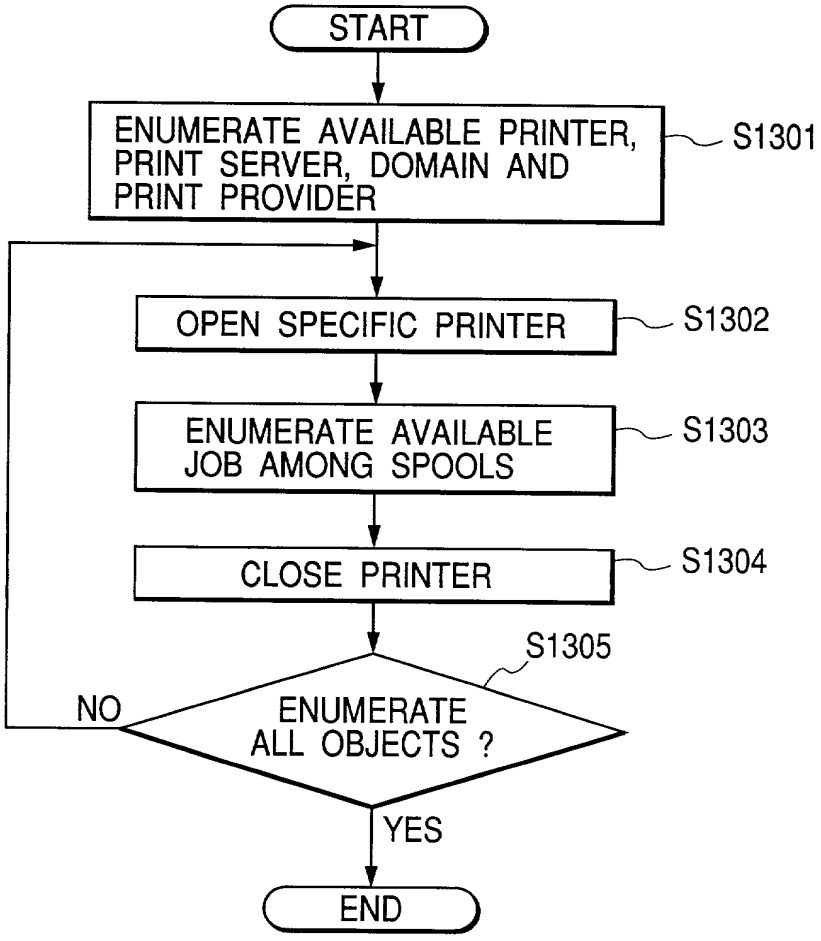

START
OBTAIN ALL JOBS FROM SPOOL
S1201
OPEN SPECIFIC PRINTER
S1202
SET STATUS OF EACH JOB TO CANCELLATION
S1203
CLOSE PRINTER
S1204
S1205
CANCELLATION OF ALL JOBS ?
NO
YES
END

FIG. 13


START
ENUMERATE AVAILABLE PRINTER, PRINT SERVER, DOMAIN AND PRINT PROVIDER
S1301
OPEN SPECIFIC PRINTER
S1302
ENUMERATE AVAILABLE JOB AMONG SPOOLS
S1303
CLOSE PRINTER
S1304
S1305
ENUMERATE ALL OBJECTS ?
NO
YES
END

EP 1 705 569 A1

FIG. 14

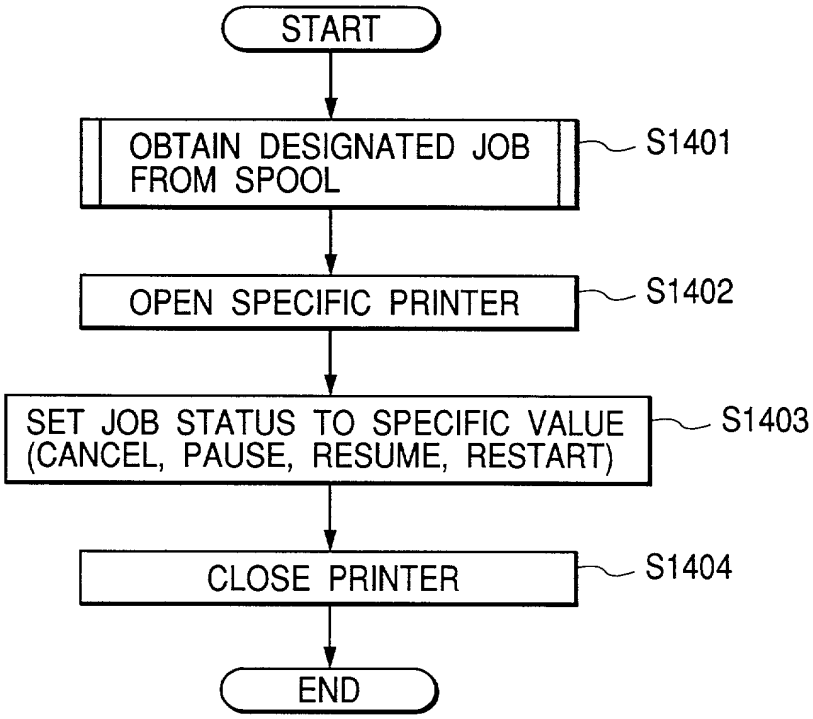


FIG. 15

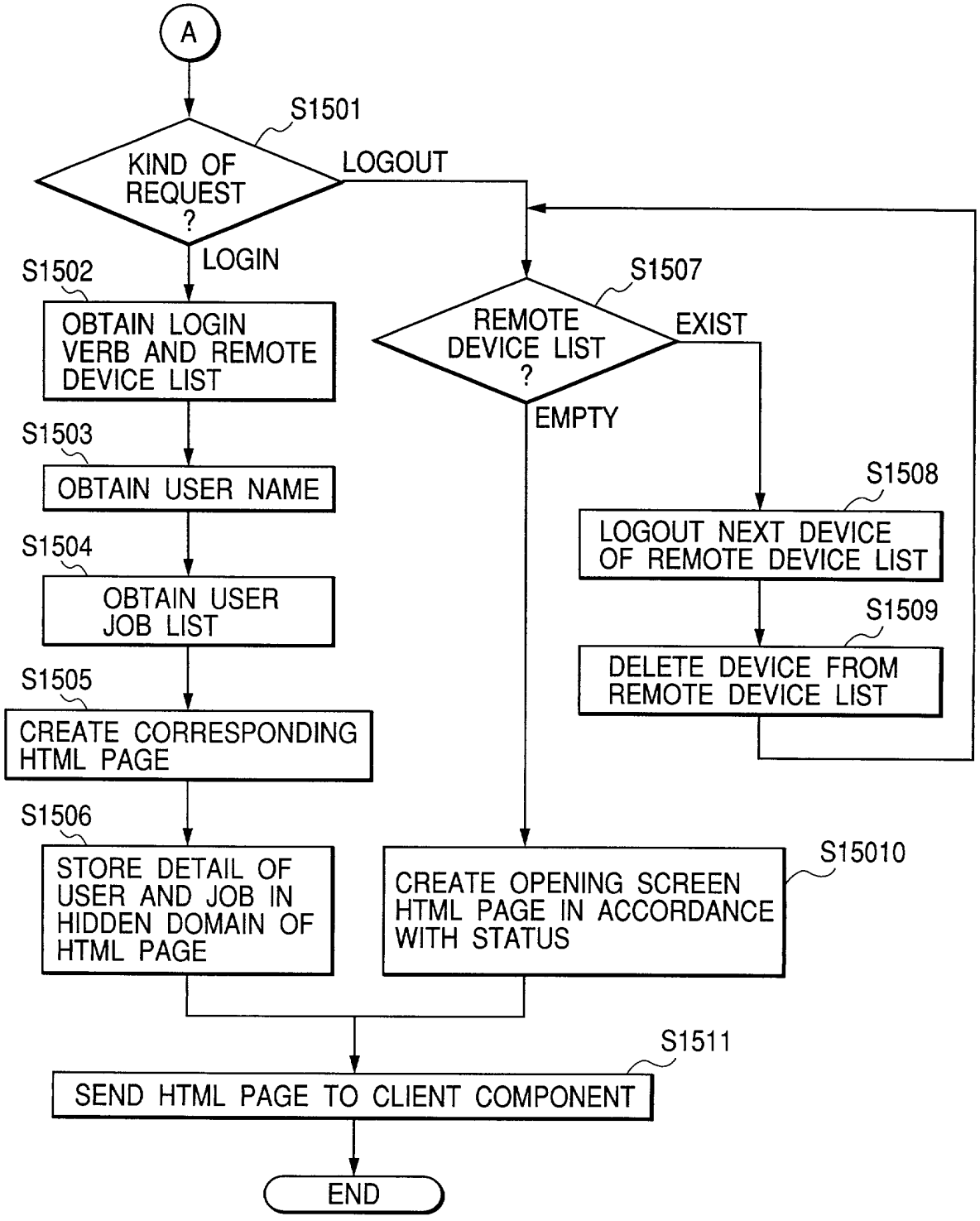

A
S1501
KIND OF REQUEST ?
LOGOUT
LOGIN
S1502
OBTAIN LOGIN VERB AND REMOTE DEVICE LIST
S1503
OBTAIN USER NAME
S1504
OBTAIN USER JOB LIST
S1505
CREATE CORRESPONDING HTML PAGE
S1506
STORE DETAIL OF USER AND JOB IN HIDDEN DOMAIN OF HTML PAGE
S1507
REMOTE DEVICE LIST ?
EXIST
EMPTY
S1508
LOGOUT NEXT DEVICE OF REMOTE DEVICE LIST
S1509
DELETE DEVICE FROM REMOTE DEVICE LIST
S15010
CREATE OPENING SCREEN HTML PAGE IN ACCORDANCE WITH STATUS
S1511
SEND HTML PAGE TO CLIENT COMPONENT
END

FIG. 16

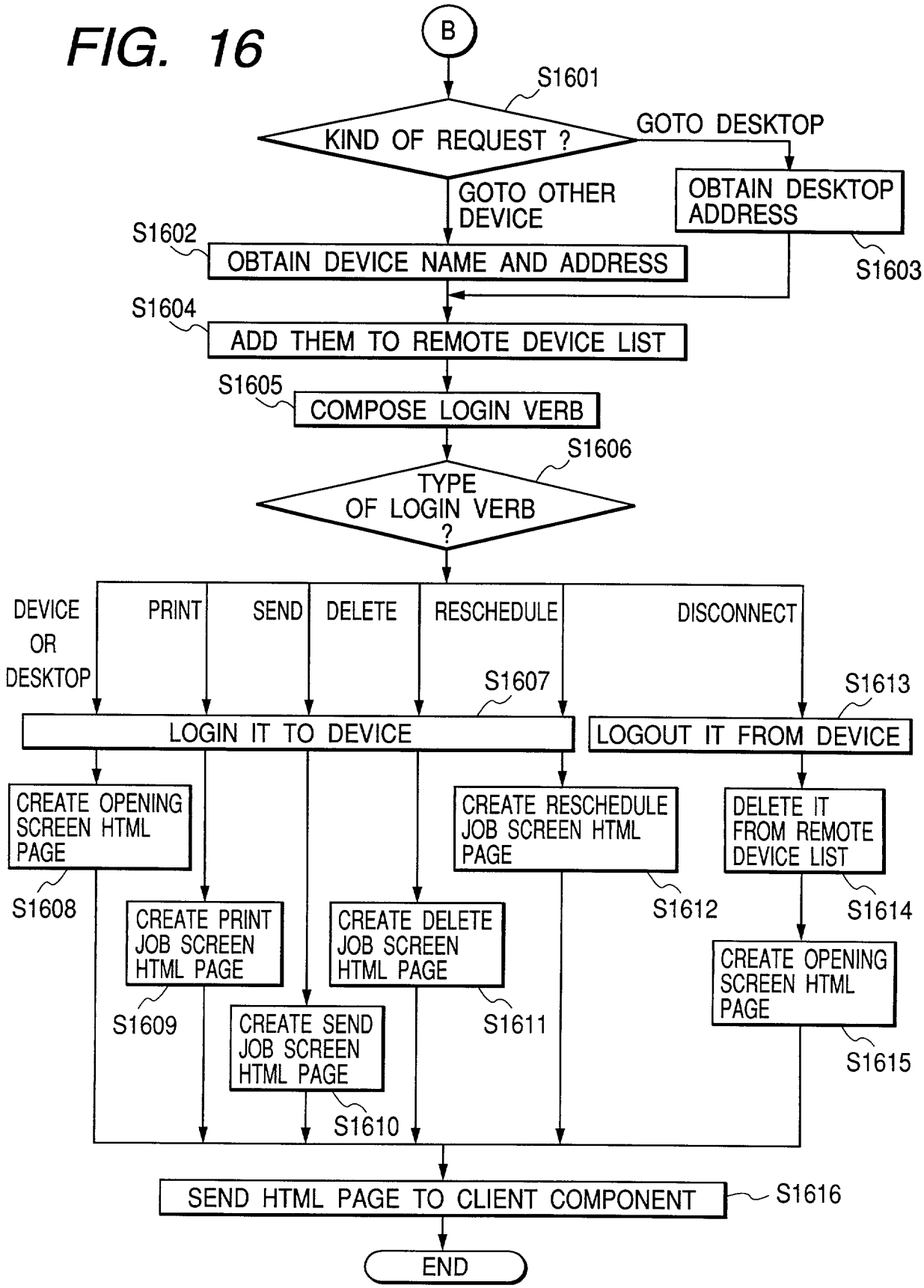

B
S1601
KIND OF REQUEST ?
GOTO DESKTOP
GOTO OTHER DEVICE
OBTAIN DESKTOP ADDRESS
S1603
S1602
OBTAIN DEVICE NAME AND ADDRESS
S1604
ADD THEM TO REMOTE DEVICE LIST
S1605
COMPOSE LOGIN VERB
S1606
TYPE OF LOGIN VERB ?
DEVICE OR DESKTOP
PRINT
SEND
DELETE
RESCHEDULE
DISCONNECT
S1607
LOGIN IT TO DEVICE
S1613
LOGOUT IT FROM DEVICE
CREATE OPENING SCREEN HTML PAGE
S1608
CREATE PRINT JOB SCREEN HTML PAGE
S1609
CREATE SEND JOB SCREEN HTML PAGE
S1610
CREATE DELETE JOB SCREEN HTML PAGE
S1611
CREATE RESCHEDULE JOB SCREEN HTML PAGE
S1612
DELETE IT FROM REMOTE DEVICE LIST
S1614
CREATE OPENING SCREEN HTML PAGE
S1615
SEND HTML PAGE TO CLIENT COMPONENT
S1616
END

FIG. 17

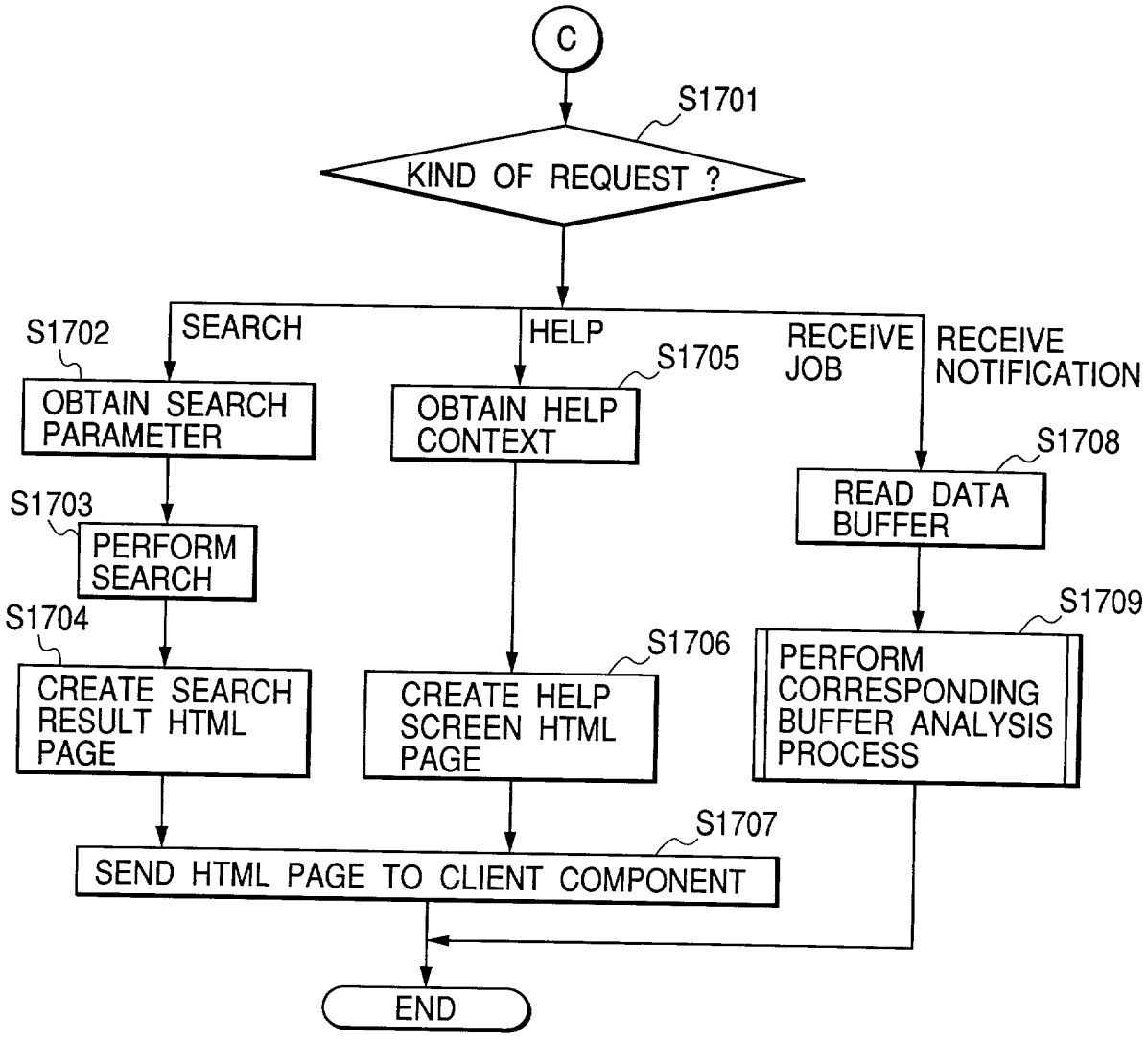
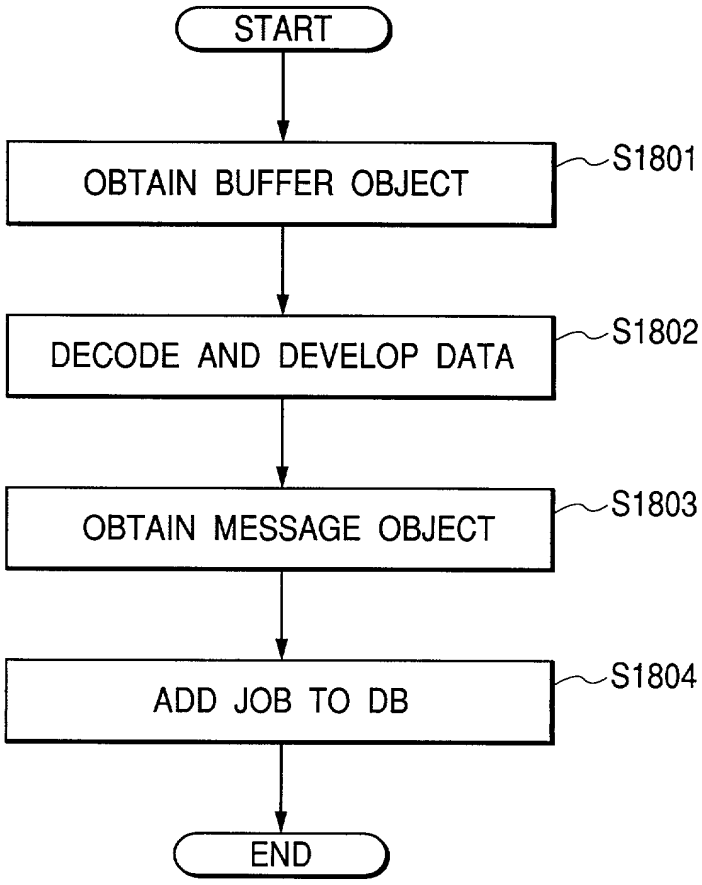

C
S1701
KIND OF REQUEST ?
SEARCH
HELP
RECEIVE JOB
RECEIVE NOTIFICATION
S1702
OBTAIN SEARCH PARAMETER
S1703
PERFORM SEARCH
S1704
CREATE SEARCH RESULT HTML PAGE
S1705
OBTAIN HELP CONTEXT
S1706
CREATE HELP SCREEN HTML PAGE
S1708
READ DATA BUFFER
S1709
PERFORM CORRESPONDING BUFFER ANALYSIS PROCESS
S1707
SEND HTML PAGE TO CLIENT COMPONENT
END

FIG. 18



EP 3 605 476 A1

FIG. 19

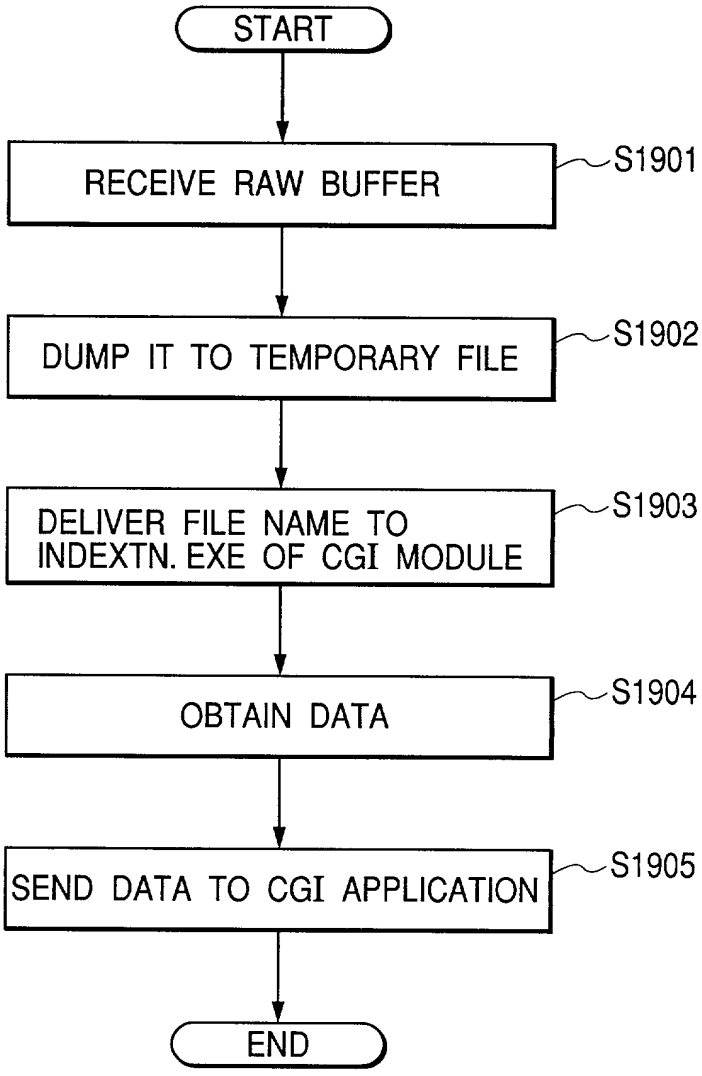
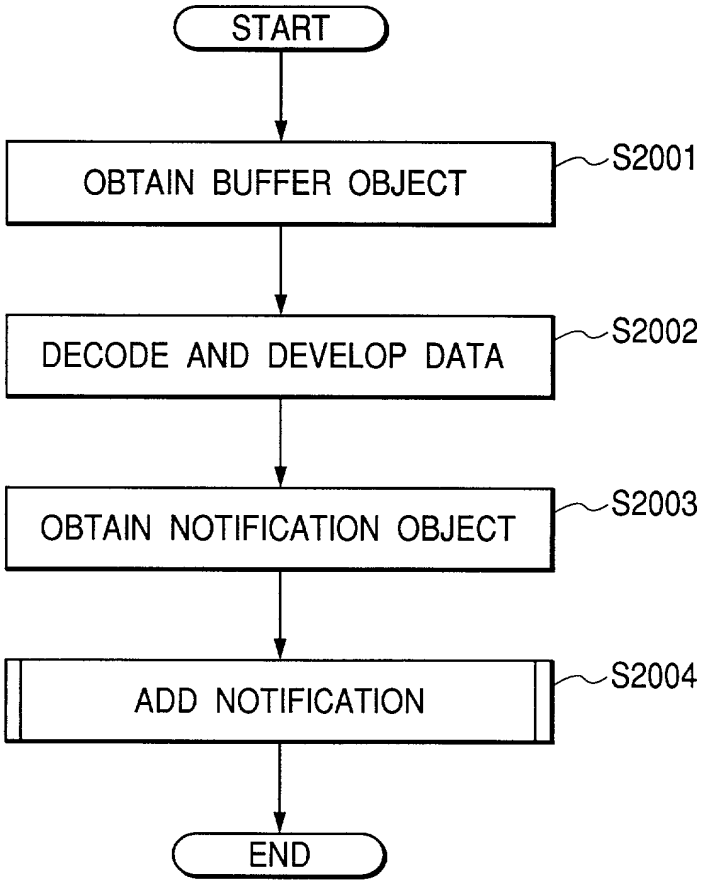

START
RECEIVE RAW BUFFER
S1901
DUMP IT TO TEMPORARY FILE
S1902
DELIVER FILE NAME TO INDEXTN. EXE OF CGI MODULE
S1903
OBTAIN DATA
S1904
SEND DATA TO CGI APPLICATION
S1905
END

FIG. 20



EP 1 970 798 A1

FIG. 21

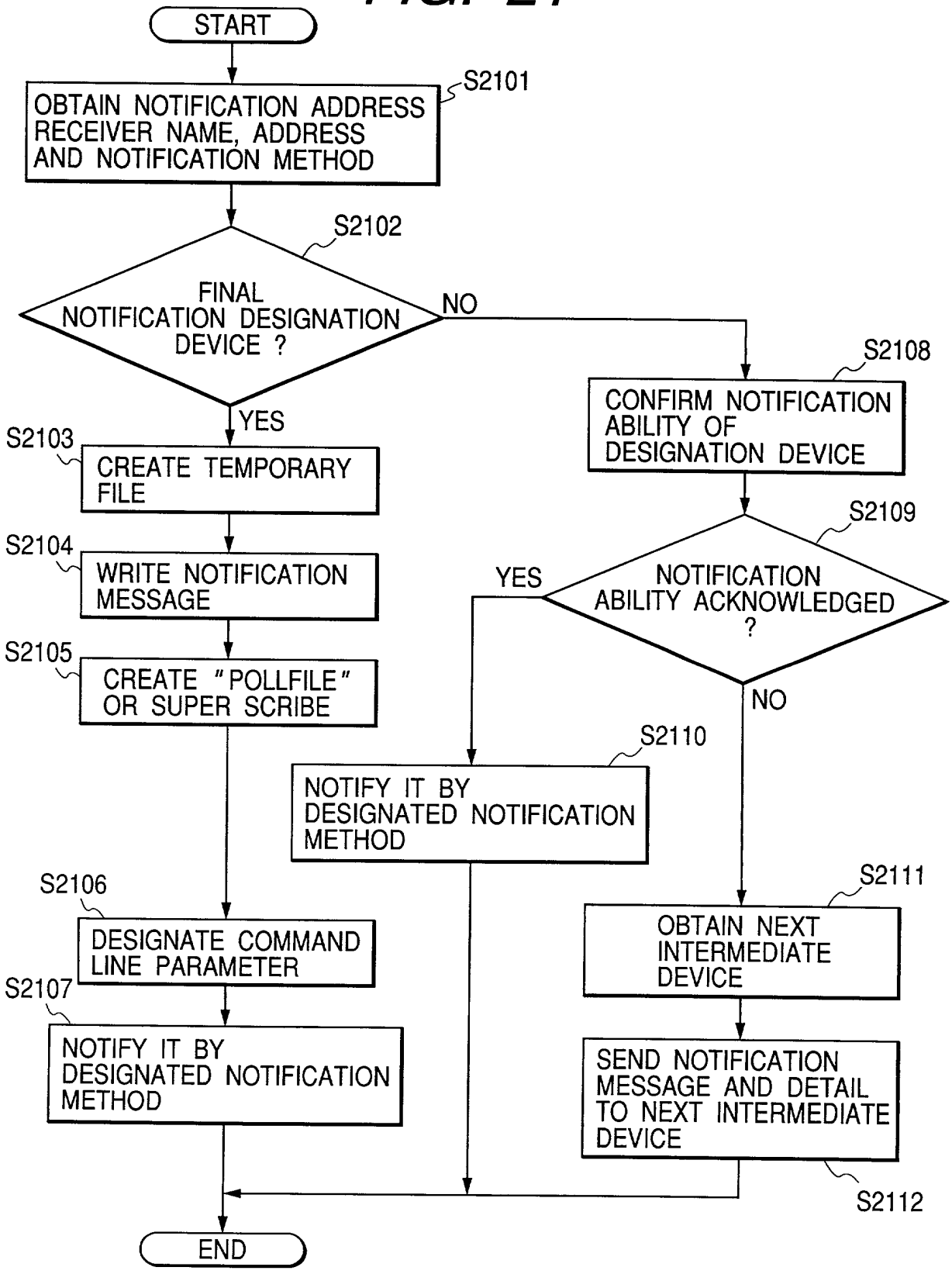

START
OBTAIN NOTIFICATION ADDRESS RECEIVER NAME, ADDRESS AND NOTIFICATION METHOD
S2101
S2102
FINAL NOTIFICATION DESIGNATION DEVICE ?
NO
YES
S2103
CREATE TEMPORARY FILE
S2104
WRITE NOTIFICATION MESSAGE
S2105
CREATE "POLLFILE" OR SUPER SCRIBE
S2106
DESIGNATE COMMAND LINE PARAMETER
S2107
NOTIFY IT BY DESIGNATED NOTIFICATION METHOD
S2108
CONFIRM NOTIFICATION ABILITY OF DESIGNATION DEVICE
S2109
NOTIFICATION ABILITY ACKNOWLEDGED ?
YES
NO
S2110
NOTIFY IT BY DESIGNATED NOTIFICATION METHOD
S2111
OBTAIN NEXT INTERMEDIATE DEVICE
SEND NOTIFICATION MESSAGE AND DETAIL TO NEXT INTERMEDIATE DEVICE
S2112
END

FIG. 22

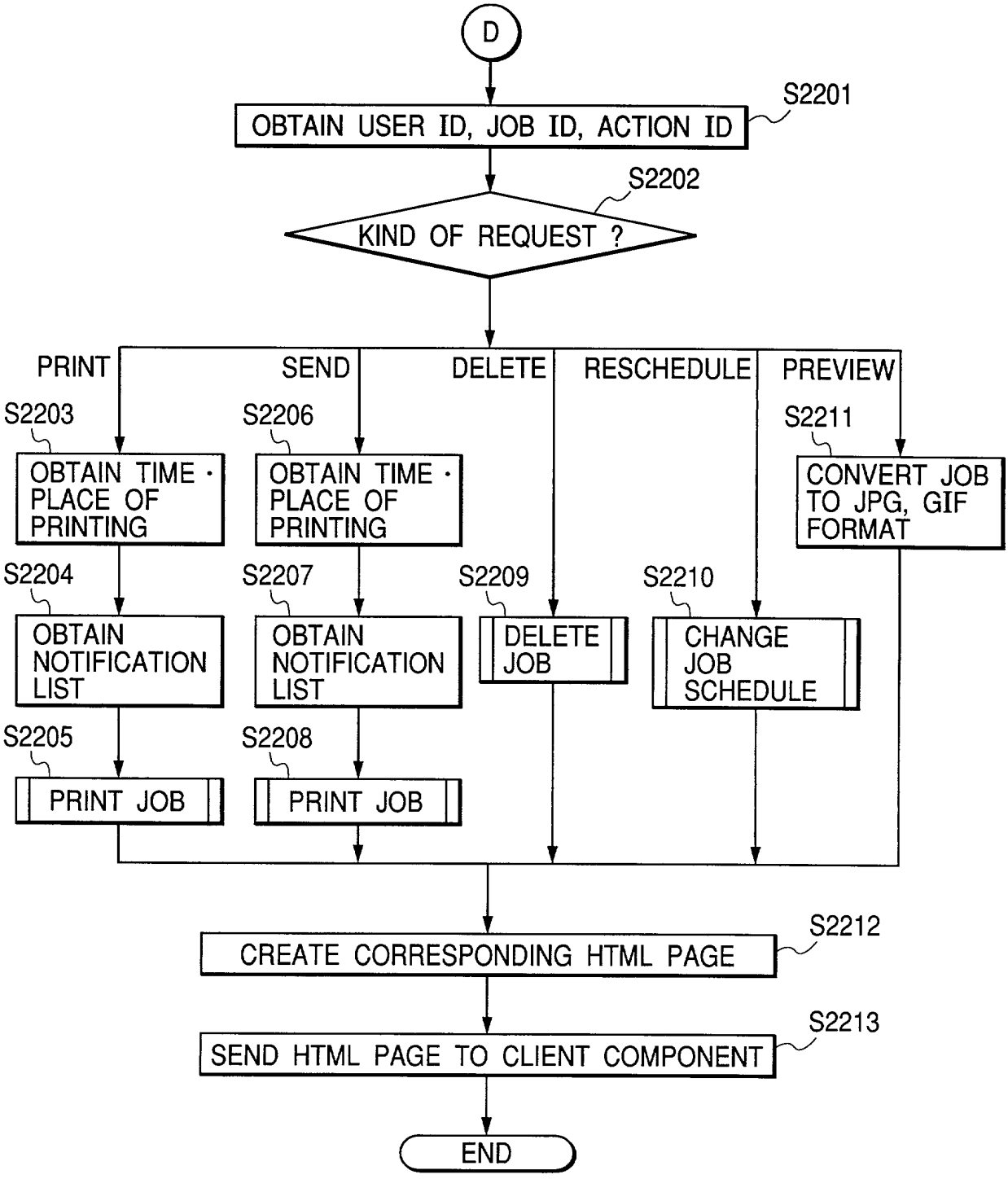

D
OBTAIN USER ID, JOB ID, ACTION ID
S2201
S2202
KIND OF REQUEST ?
PRINT
SEND
DELETE
RESCHEDULE
PREVIEW
S2203
OBTAIN TIME · PLACE OF PRINTING
S2206
OBTAIN TIME · PLACE OF PRINTING
S2211
CONVERT JOB TO JPG, GIF FORMAT
S2204
OBTAIN NOTIFICATION LIST
S2207
OBTAIN NOTIFICATION LIST
S2209
DELETE JOB
S2210
CHANGE JOB SCHEDULE
S2205
PRINT JOB
S2208
PRINT JOB
S2212
CREATE CORRESPONDING HTML PAGE
S2213
SEND HTML PAGE TO CLIENT COMPONENT
END

FIG. 23

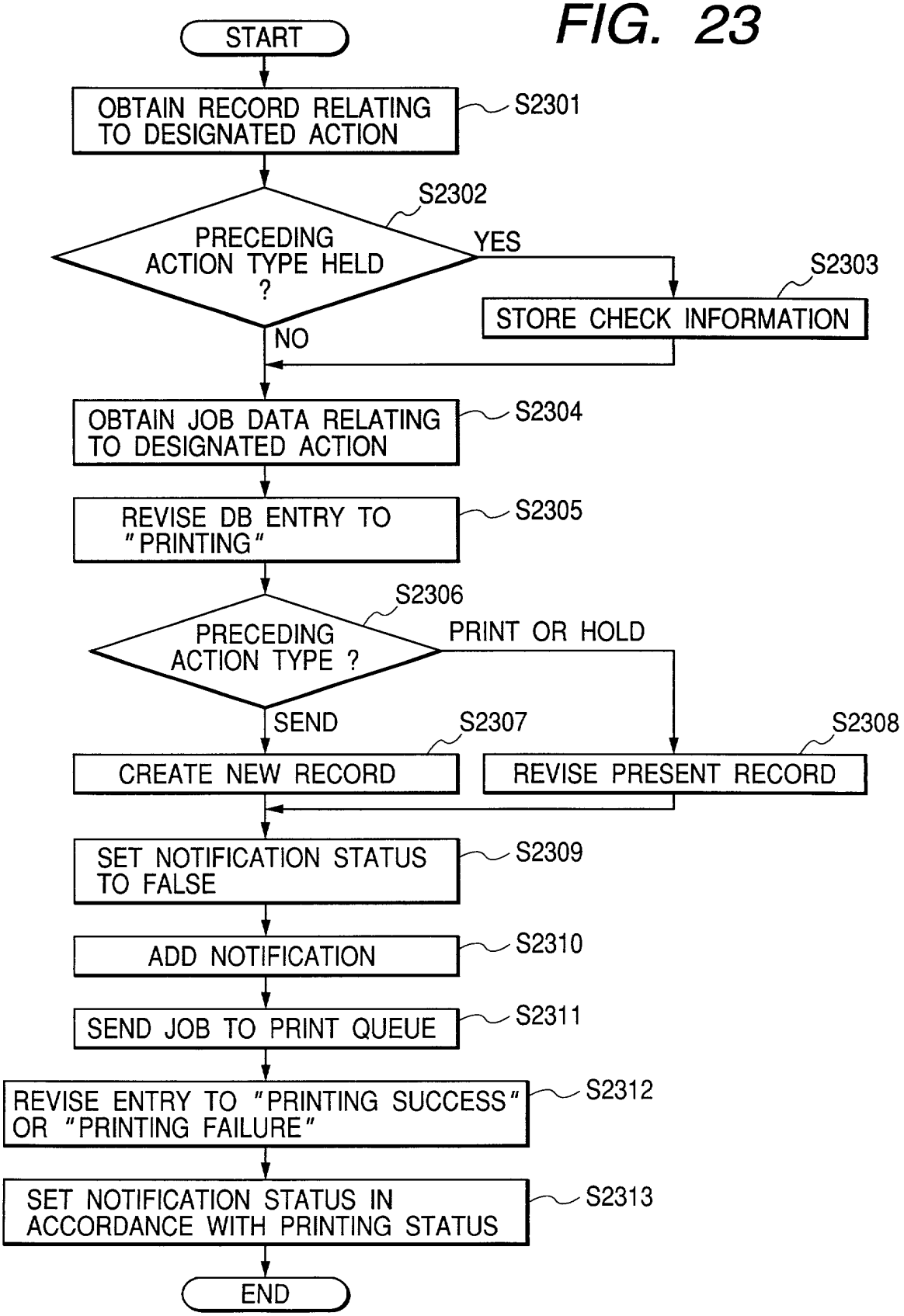

START
OBTAIN RECORD RELATING TO DESIGNATED ACTION
S2301
PRECEDING ACTION TYPE HELD ?
S2302
YES
NO
STORE CHECK INFORMATION
S2303
OBTAIN JOB DATA RELATING TO DESIGNATED ACTION
S2304
REVISE DB ENTRY TO "PRINTING"
S2305
PRECEDING ACTION TYPE ?
S2306
PRINT OR HOLD
SEND
CREATE NEW RECORD
S2307
REVISE PRESENT RECORD
S2308
SET NOTIFICATION STATUS TO FALSE
S2309
ADD NOTIFICATION
S2310
SEND JOB TO PRINT QUEUE
S2311
REVISE ENTRY TO "PRINTING SUCCESS" OR "PRINTING FAILURE"
S2312
SET NOTIFICATION STATUS IN ACCORDANCE WITH PRINTING STATUS
S2313
END

FIG. 24

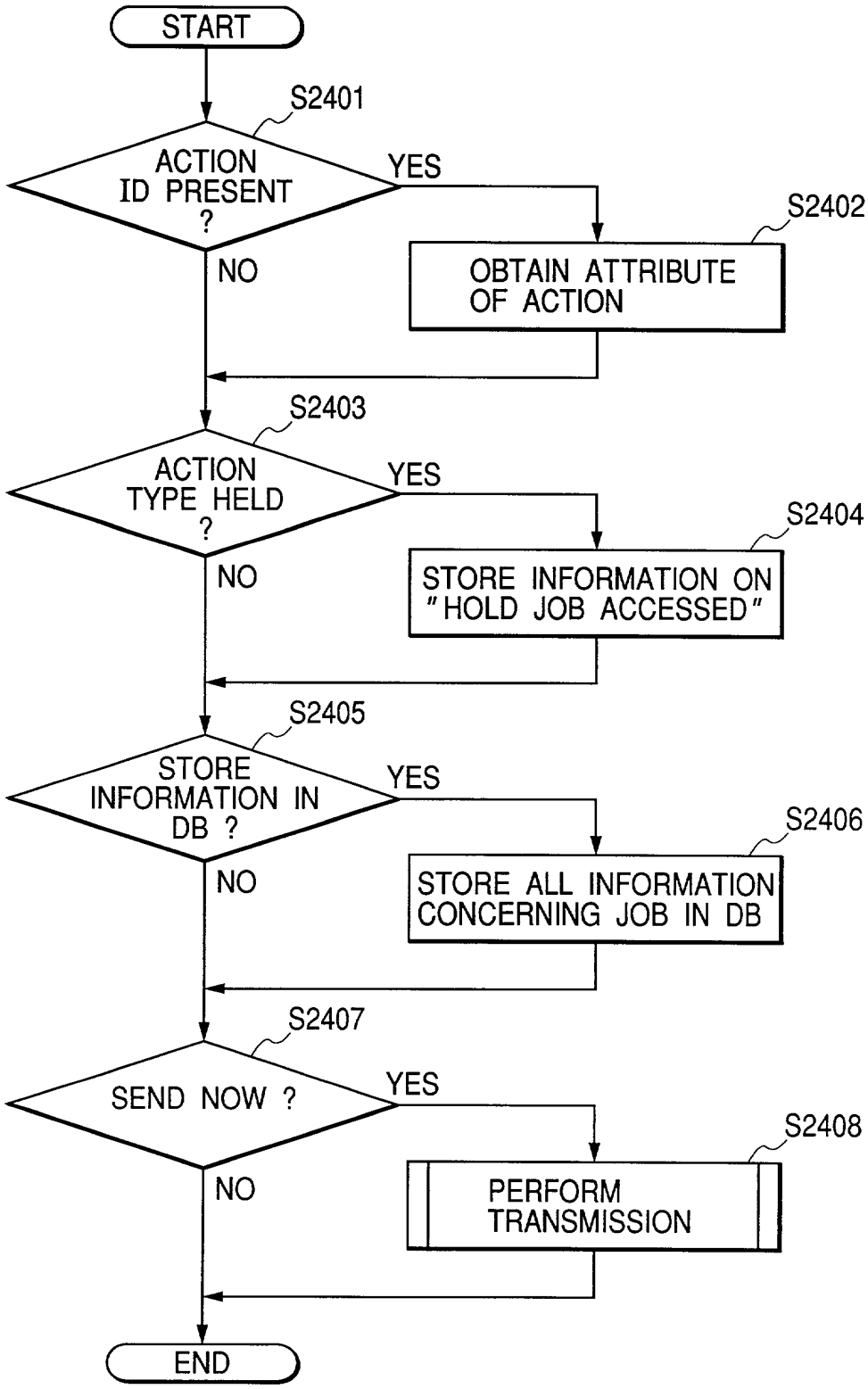

START
S2401
ACTION ID PRESENT ?
YES
NO
S2402
OBTAIN ATTRIBUTE OF ACTION
S2403
ACTION TYPE HELD ?
YES
NO
S2404
STORE INFORMATION ON "HOLD JOB ACCESSED"
S2405
STORE INFORMATION IN DB ?
YES
NO
S2406
STORE ALL INFORMATION CONCERNING JOB IN DB
S2407
SEND NOW ?
YES
NO
S2408
PERFORM TRANSMISSION
END

FIG. 25

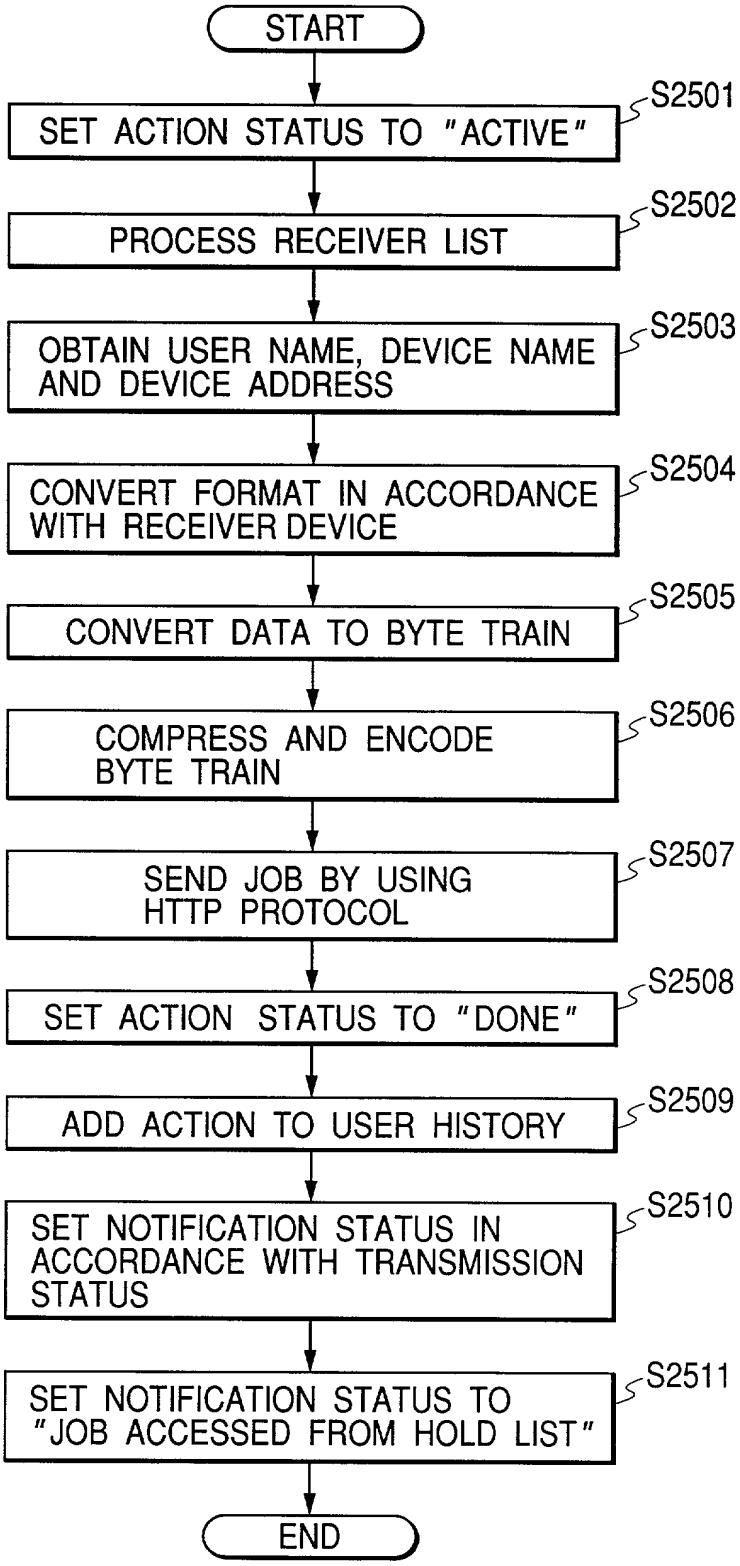

START
SET ACTION STATUS TO "ACTIVE"
S2501
PROCESS RECEIVER LIST
S2502
OBTAIN USER NAME, DEVICE NAME AND DEVICE ADDRESS
S2503
CONVERT FORMAT IN ACCORDANCE WITH RECEIVER DEVICE
S2504
CONVERT DATA TO BYTE TRAIN
S2505
COMPRESS AND ENCODE BYTE TRAIN
S2506
SEND JOB BY USING HTTP PROTOCOL
S2507
SET ACTION STATUS TO "DONE"
S2508
ADD ACTION TO USER HISTORY
S2509
SET NOTIFICATION STATUS IN ACCORDANCE WITH TRANSMISSION STATUS
S2510
SET NOTIFICATION STATUS TO "JOB ACCESSED FROM HOLD LIST"
S2511
END

FIG. 26

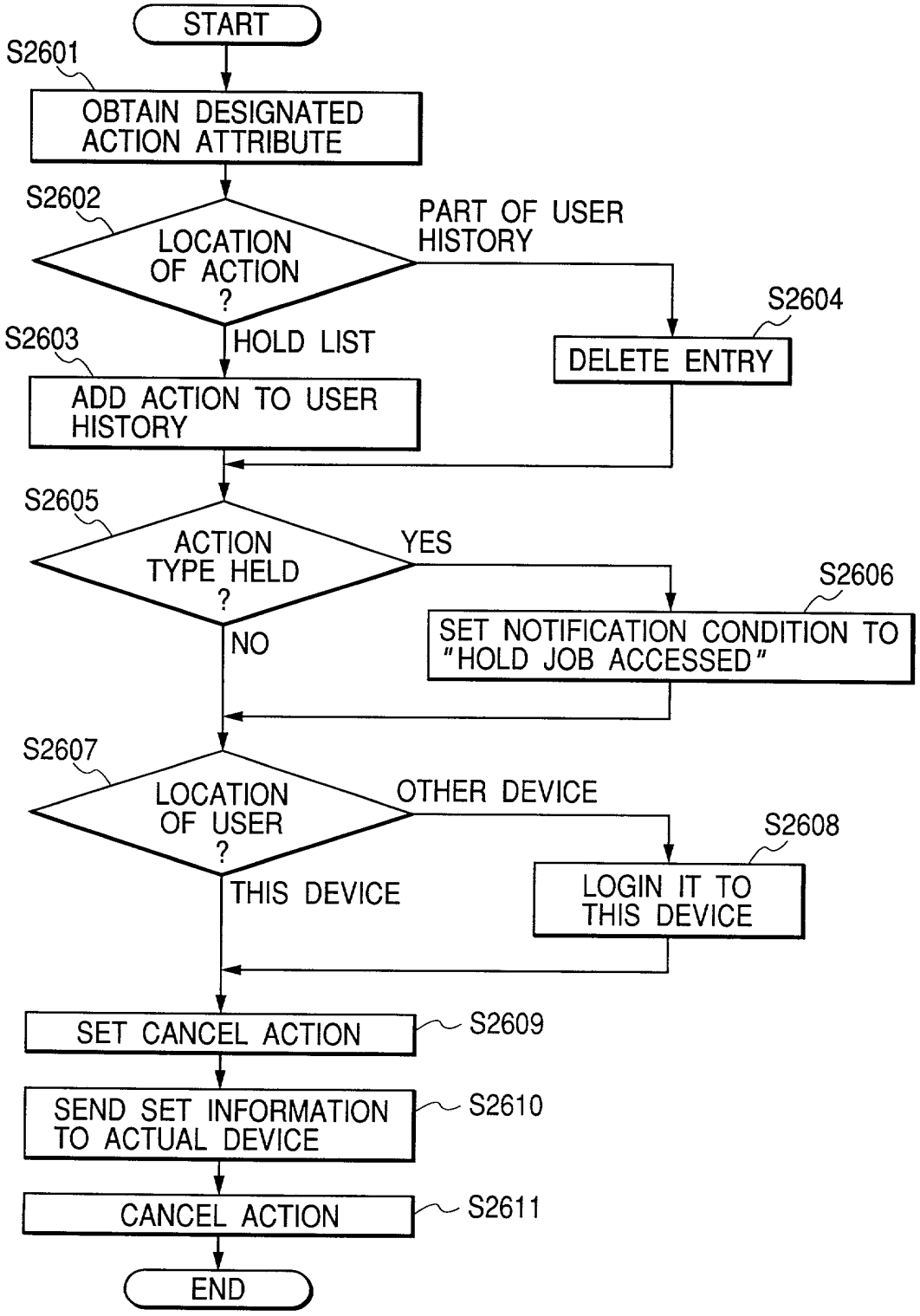

START
S2601
OBTAIN DESIGNATED ACTION ATTRIBUTE
S2602
LOCATION OF ACTION ?
PART OF USER HISTORY
S2604
DELETE ENTRY
S2603
HOLD LIST
ADD ACTION TO USER HISTORY
S2605
ACTION TYPE HELD ?
YES
S2606
SET NOTIFICATION CONDITION TO "HOLD JOB ACCESSED"
NO
S2607
LOCATION OF USER ?
OTHER DEVICE
S2608
LOGIN IT TO THIS DEVICE
THIS DEVICE
SET CANCEL ACTION
S2609
SEND SET INFORMATION TO ACTUAL DEVICE
S2610
CANCEL ACTION
S2611
END

FIG. 27

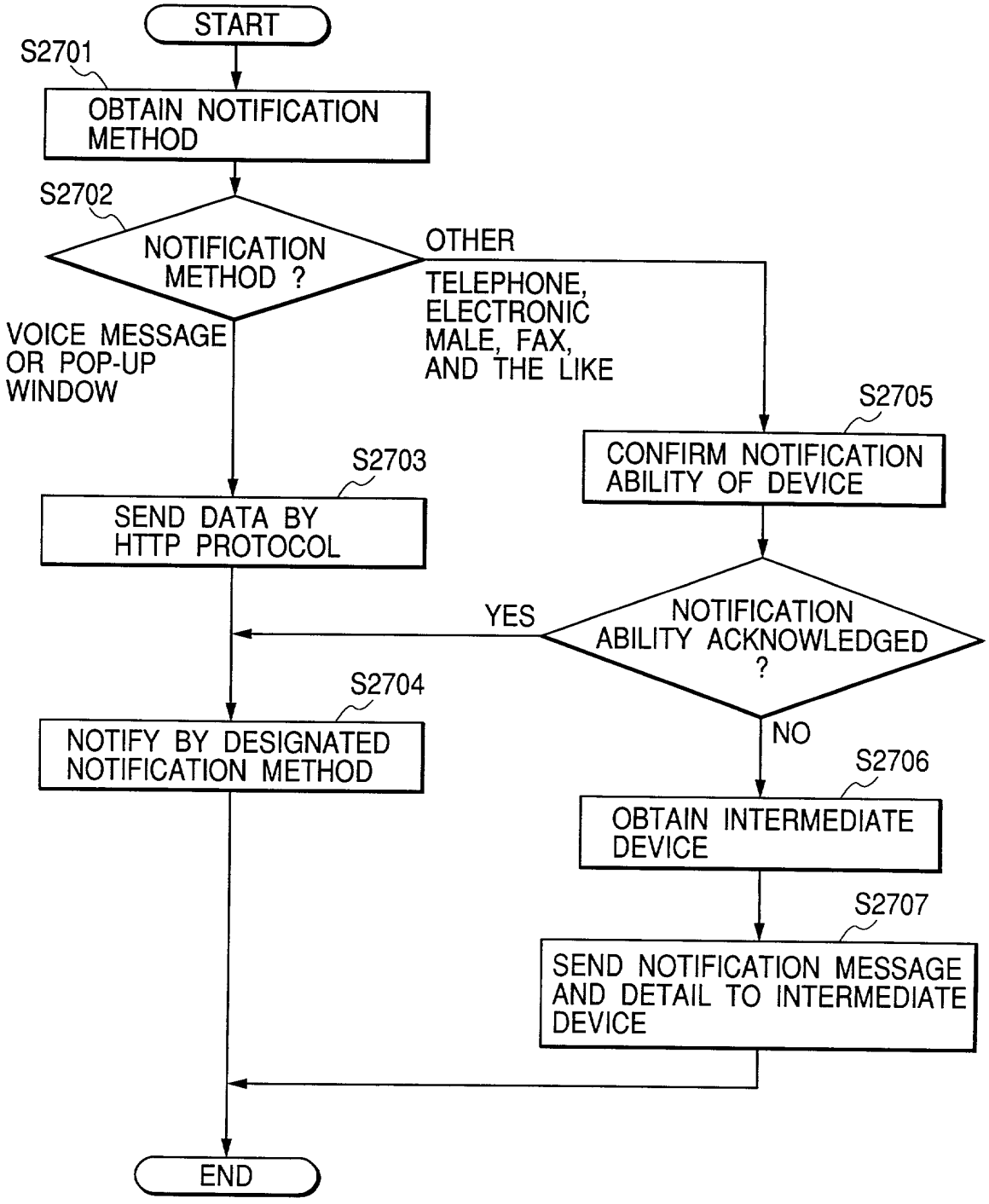

START
S2701
OBTAIN NOTIFICATION METHOD
S2702
NOTIFICATION METHOD ?
OTHER
TELEPHONE, ELECTRONIC MALE, FAX, AND THE LIKE
VOICE MESSAGE OR POP-UP WINDOW
S2705
CONFIRM NOTIFICATION ABILITY OF DEVICE
S2703
SEND DATA BY HTTP PROTOCOL
YES
NOTIFICATION ABILITY ACKNOWLEDGED ?
S2704
NOTIFY BY DESIGNATED NOTIFICATION METHOD
NO
S2706
OBTAIN INTERMEDIATE DEVICE
S2707
SEND NOTIFICATION MESSAGE AND DETAIL TO INTERMEDIATE DEVICE
END

FIG. 28

[SERVER INPUT INFORMATION]	
KINDS OF INPUT	PROCESS
(REQUEST) PRINT JOB SEND JOB RECEIVE JOB CANCEL ALL JOBS SEND NOTIFICATION RECEIVE NOTIFICATION CANCEL / PAUSE / RESTART (RECEIVE)	 PRINT JOB SEND JOB ADD JOB TO DB CANCEL ALL JOBS SEND NOTIFICATION RECEIVE NOTIFICATION SET JOB TO EACH ACTION
PREVIEW SEARCH DELETE RESCHEDULE HELP OPENING SCREEN MAIN MENU LOGIN LOGOUT GOTO OTHER DEVICE GOTO DESKTOP	DISPLAY CORRESPONDING NEW HTML PAGE

0917065 EP 1014699

FIG. 29

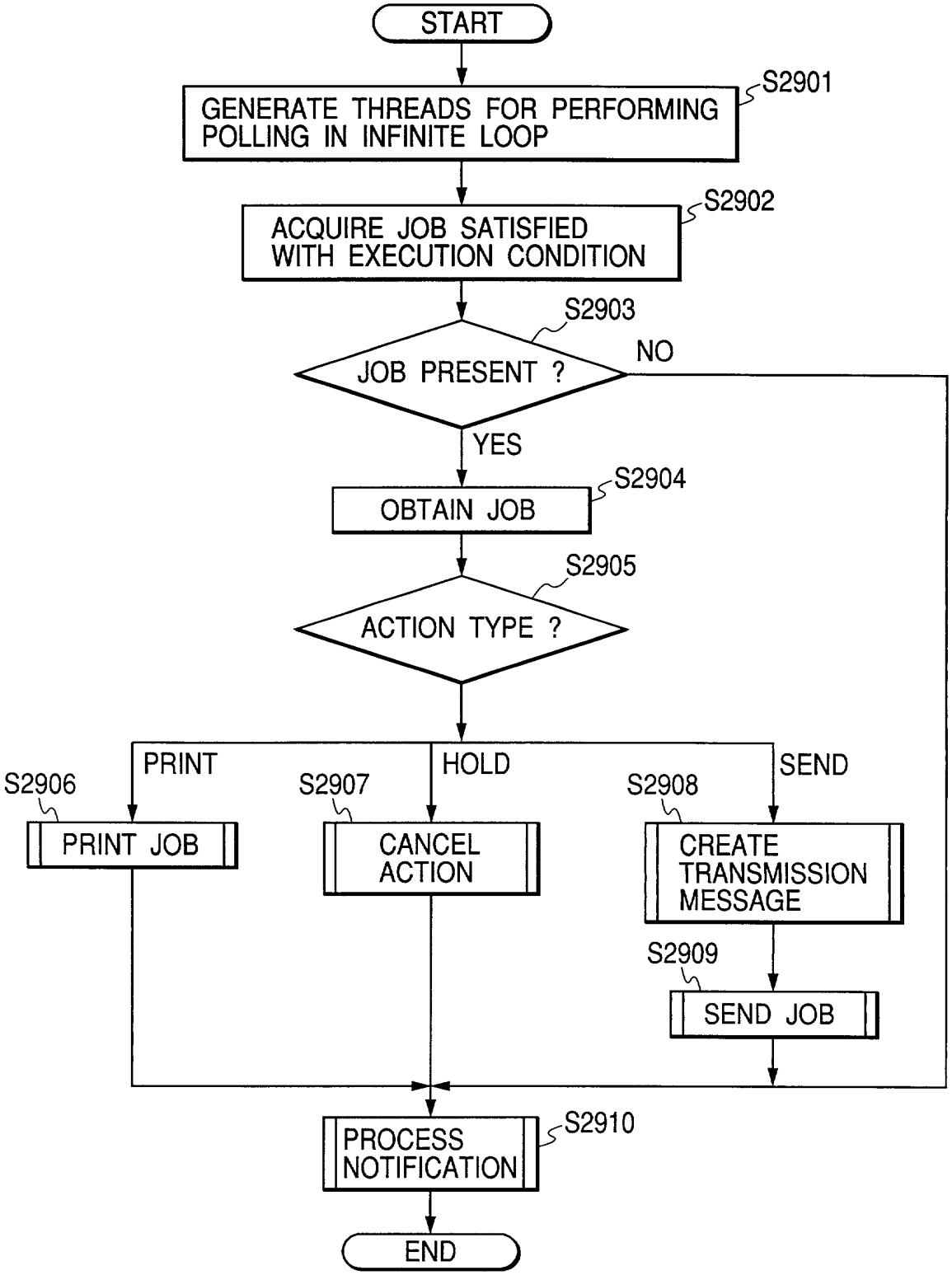
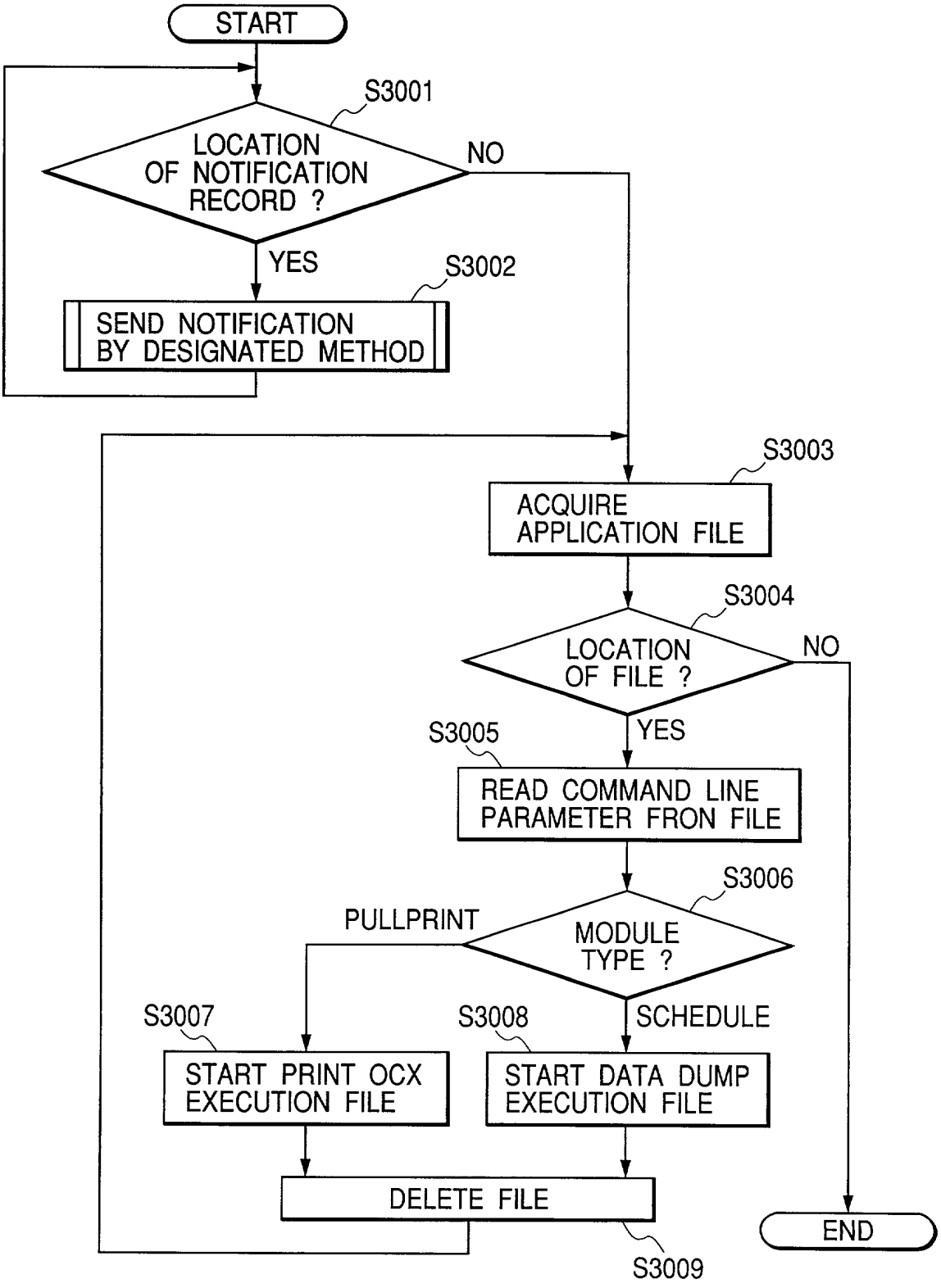

START
GENERATE THREADS FOR PERFORMING POLLING IN INFINITE LOOP
S2901
ACQUIRE JOB SATISFIED WITH EXECUTION CONDITION
S2902
JOB PRESENT ?
S2903
NO
YES
OBTAIN JOB
S2904
ACTION TYPE ?
S2905
PRINT
HOLD
SEND
S2906
S2907
S2908
PRINT JOB
CANCEL ACTION
CREATE TRANSMISSION MESSAGE
S2909
SEND JOB
PROCESS NOTIFICATION
S2910
END

FIG. 30


START
S3001
LOCATION OF NOTIFICATION RECORD ?
NO
YES
S3002
SEND NOTIFICATION BY DESIGNATED METHOD
S3003
ACQUIRE APPLICATION FILE
S3004
LOCATION OF FILE ?
NO
YES
S3005
READ COMMAND LINE PARAMETER FRON FILE
S3006
PULLPRINT
MODULE TYPE ?
SCHEDULE
S3007
START PRINT OCX EXECUTION FILE
S3008
START DATA DUMP EXECUTION FILE
DELETE FILE
S3009
END

EP 0 794 496 A2

FIG. 31

[JOB INFORMATION]	
ACTION TYPE	
PRINT	PRINT OBJECT FILE
SEND	SEND OBJECT FILE
HOLD	CANCEL OBJECT JOB
JOB OBJECT FILE	
PRINT FILE	
SEND FILE	
HOLD FILE	
NOTIFICATION	
YES / NO	
TIME	
START TIME	
AVAILABLE PERIOD	EXECUTION / MEMORY PERIOD

FIG. 32

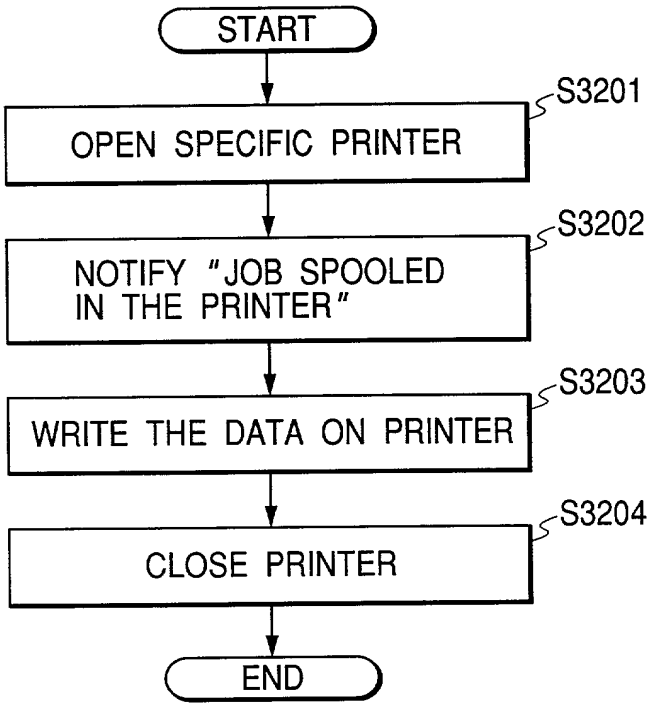

START
S3201
OPEN SPECIFIC PRINTER
S3202
NOTIFY "JOB SPOOLED IN THE PRINTER"
S3203
WRITE THE DATA ON PRINTER
S3204
CLOSE PRINTER
END

FIG. 33

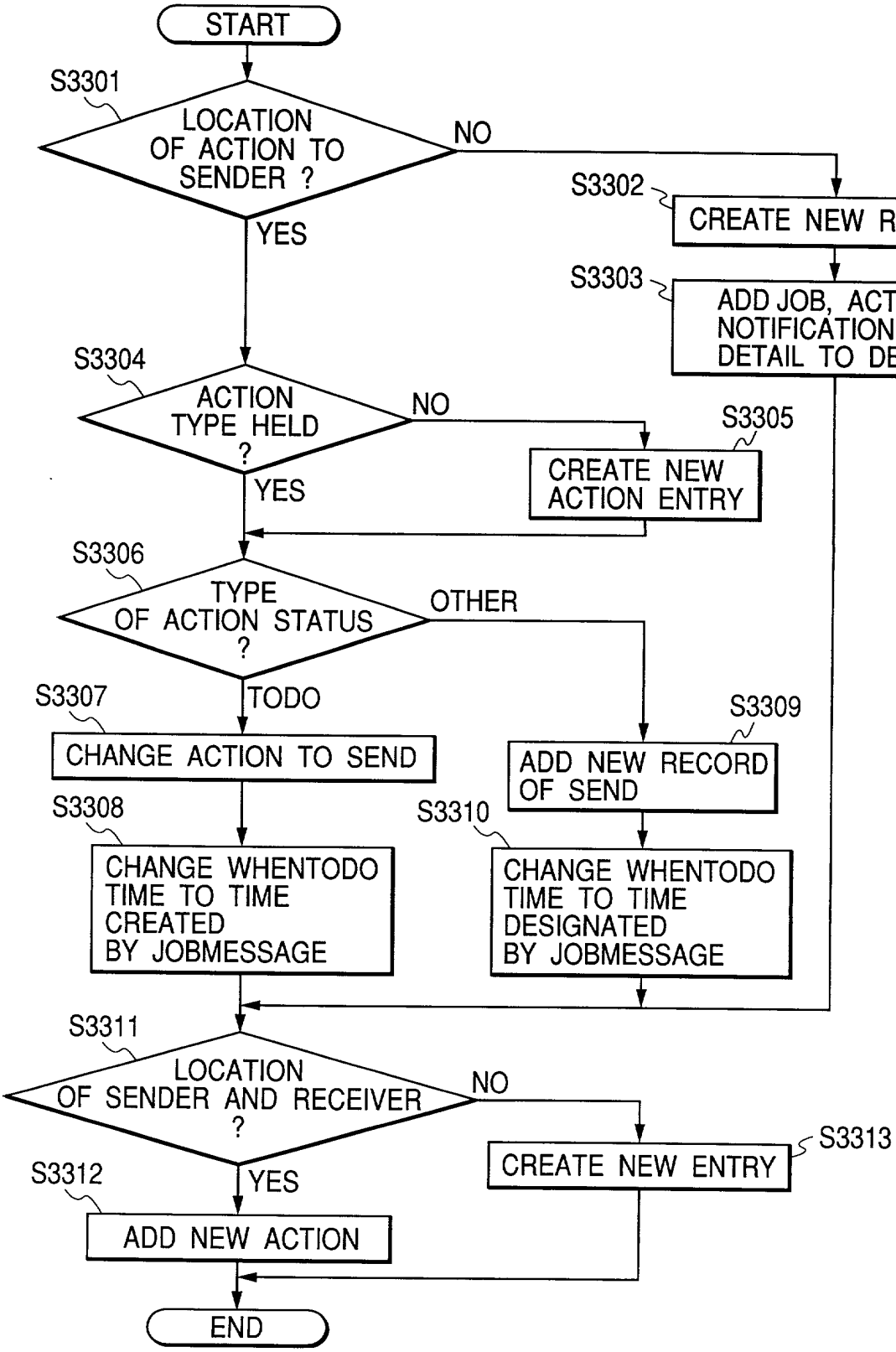

START
S3301
LOCATION OF ACTION TO SENDER ?
NO
YES
S3302
CREATE NEW RECORD
S3303
ADD JOB, ACTION, NOTIFICATION DETAIL TO DB
S3304
ACTION TYPE HELD ?
NO
YES
S3305
CREATE NEW ACTION ENTRY
S3306
TYPE OF ACTION STATUS ?
OTHER
TODO
S3307
CHANGE ACTION TO SEND
S3308
CHANGE WHENTODO TIME TO TIME CREATED BY JOBMESSAGE
S3309
ADD NEW RECORD OF SEND
S3310
CHANGE WHENTODO TIME TO TIME DESIGNATED BY JOBMESSAGE
S3311
LOCATION OF SENDER AND RECEIVER ?
NO
YES
S3312
ADD NEW ACTION
S3313
CREATE NEW ENTRY
END

FIG. 34

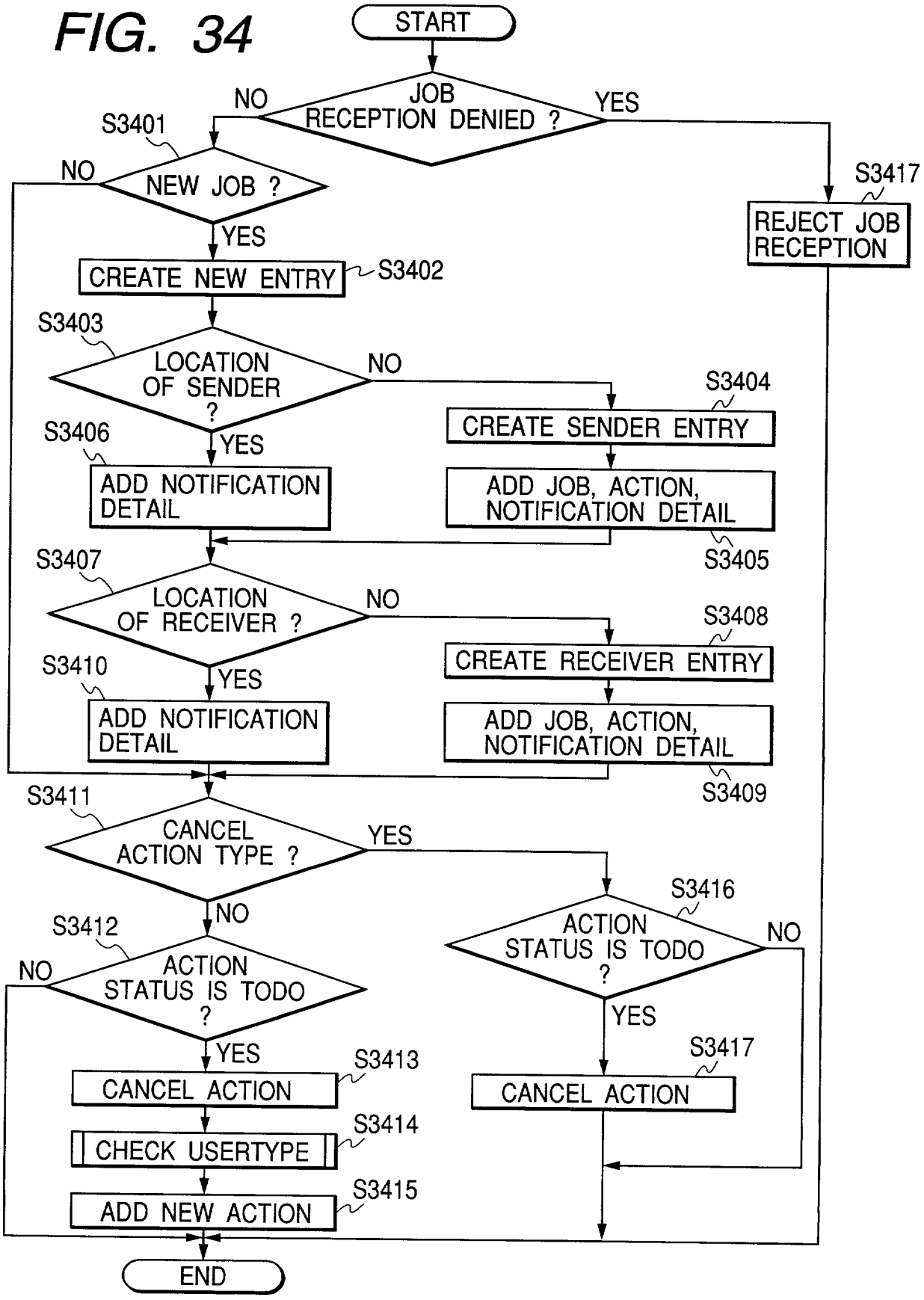

START
JOB RECEPTION DENIED ?
NO
YES
S3401
NEW JOB ?
NO
YES
S3417
REJECT JOB RECEPTION
CREATE NEW ENTRY
S3402
S3403
LOCATION OF SENDER ?
NO
YES
S3404
CREATE SENDER ENTRY
S3406
ADD NOTIFICATION DETAIL
ADD JOB, ACTION, NOTIFICATION DETAIL
S3405
S3407
LOCATION OF RECEIVER ?
NO
YES
S3408
CREATE RECEIVER ENTRY
S3410
ADD NOTIFICATION DETAIL
ADD JOB, ACTION, NOTIFICATION DETAIL
S3409
S3411
CANCEL ACTION TYPE ?
YES
NO
S3416
ACTION STATUS IS TODO ?
NO
YES
S3412
ACTION STATUS IS TODO ?
NO
YES
S3417
CANCEL ACTION
S3413
CANCEL ACTION
S3414
CHECK USERTYPE
S3415
ADD NEW ACTION
END

FIG. 35

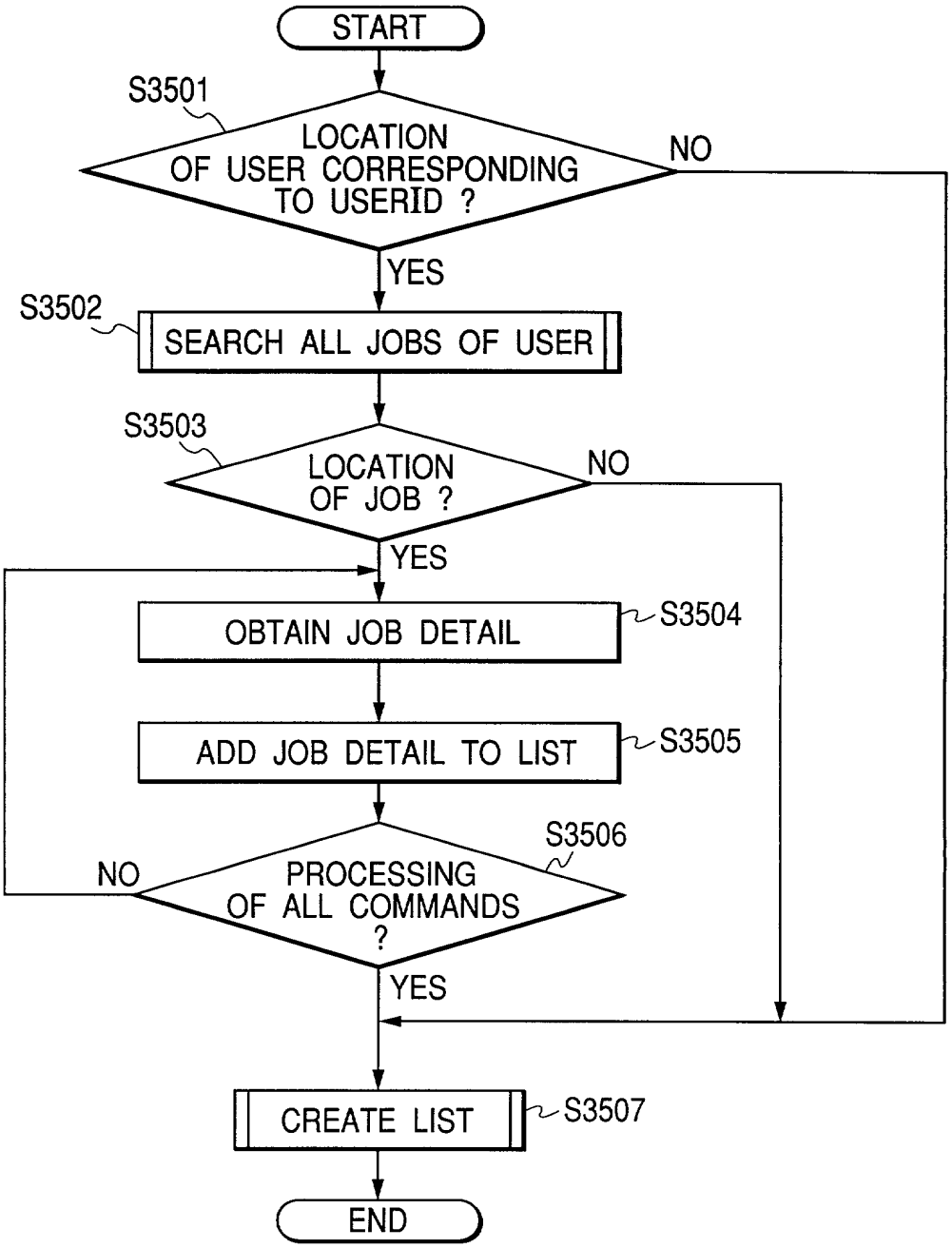

START
S3501
LOCATION OF USER CORRESPONDING TO USERID ?
NO
YES
S3502
SEARCH ALL JOBS OF USER
S3503
LOCATION OF JOB ?
NO
YES
OBTAIN JOB DETAIL
S3504
ADD JOB DETAIL TO LIST
S3505
S3506
NO
PROCESSING OF ALL COMMANDS ?
YES
CREATE LIST
S3507
END

FIG. 36

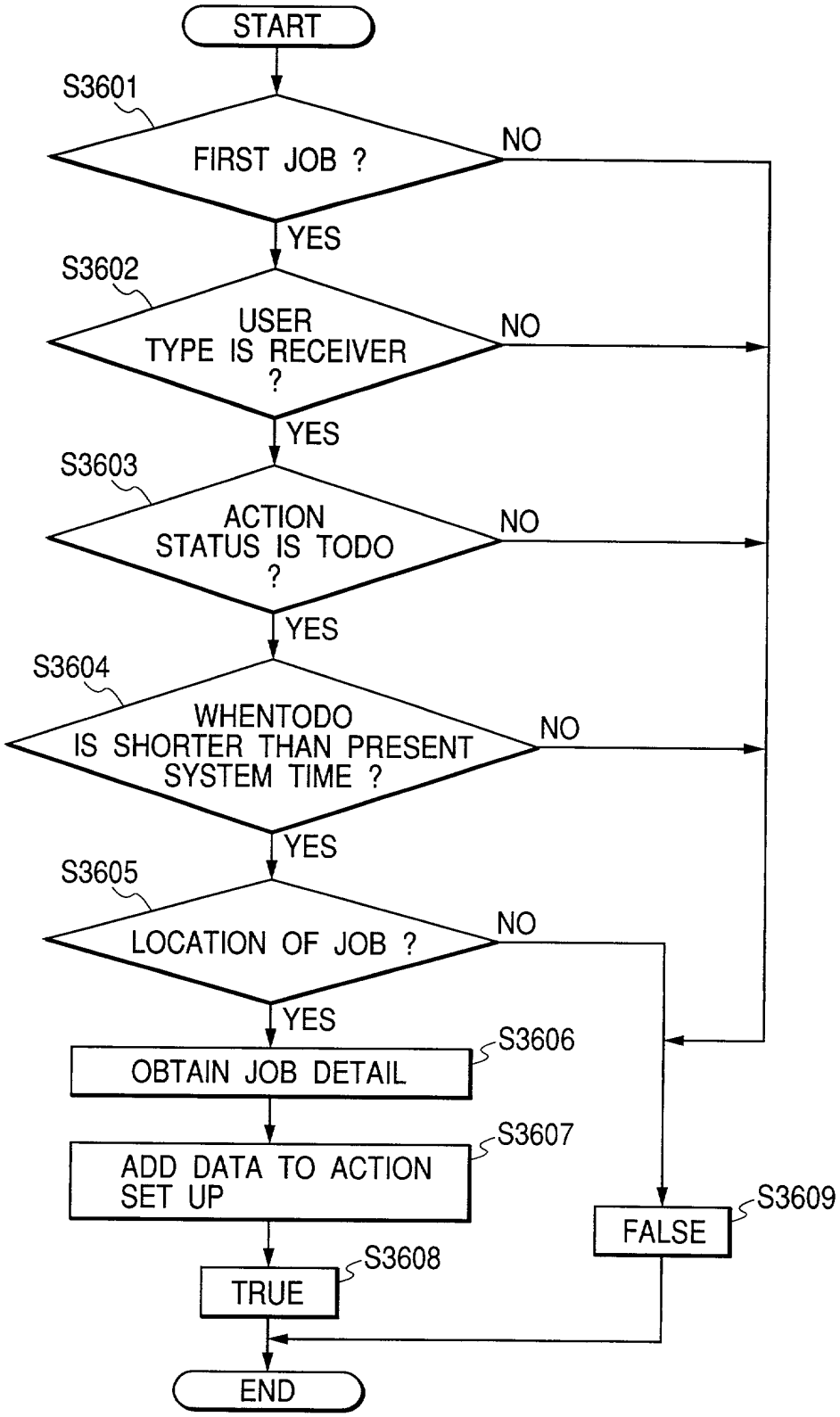

START
S3601
FIRST JOB ?
NO
YES
S3602
USER TYPE IS RECEIVER ?
NO
YES
S3603
ACTION STATUS IS TODO ?
NO
YES
S3604
WHENTODO IS SHORTER THAN PRESENT SYSTEM TIME ?
NO
YES
S3605
LOCATION OF JOB ?
NO
YES
S3606
OBTAIN JOB DETAIL
S3607
ADD DATA TO ACTION SET UP
S3608
TRUE
S3609
FALSE
END

FIG. 37

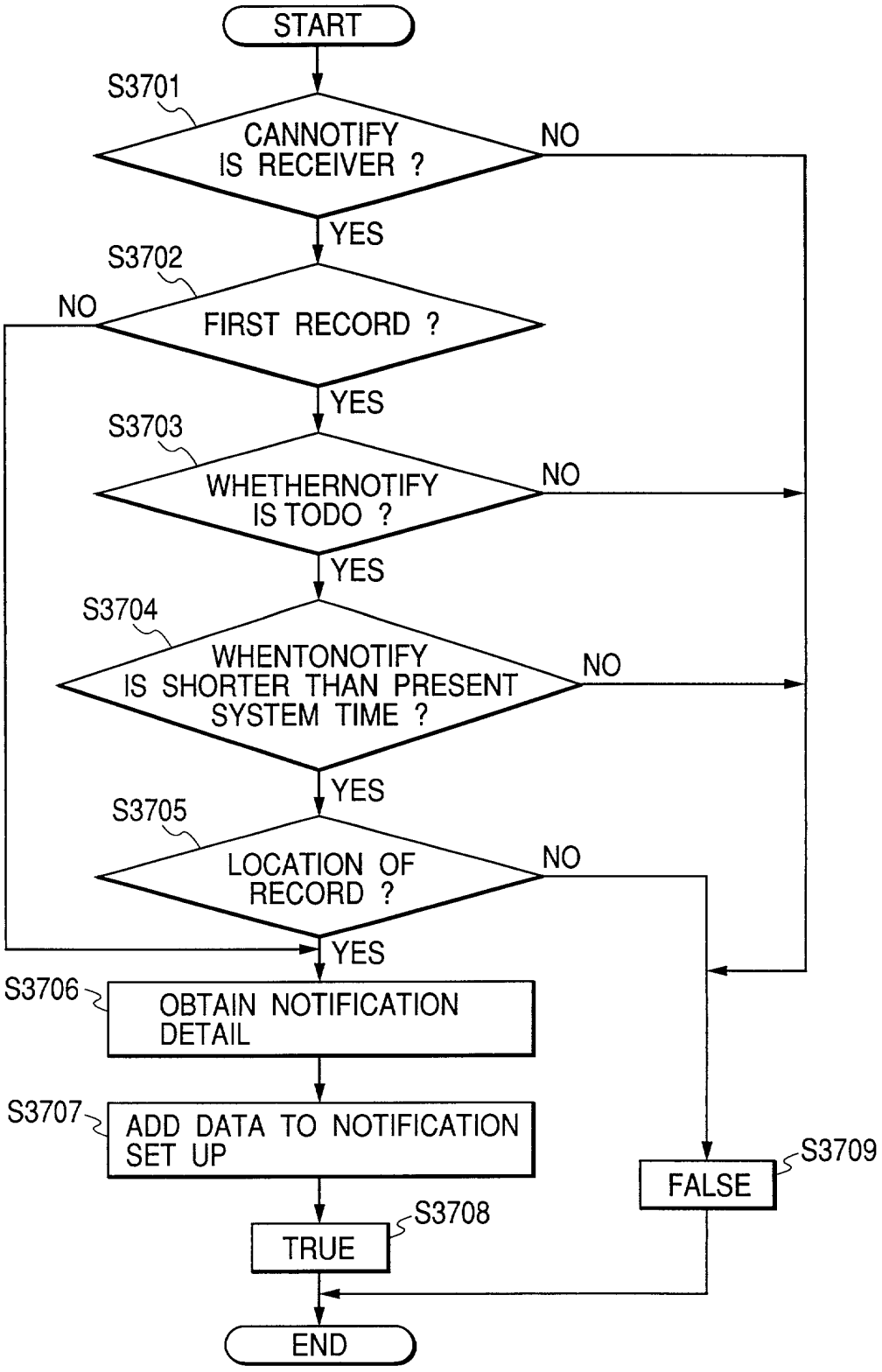

START
S3701
CANNOTIFY IS RECEIVER ?
NO
YES
S3702
NO
FIRST RECORD ?
YES
S3703
WHETHERNOTIFY IS TODO ?
NO
YES
S3704
WHENTONOTIFY IS SHORTER THAN PRESENT SYSTEM TIME ?
NO
YES
S3705
LOCATION OF RECORD ?
NO
YES
S3706
OBTAIN NOTIFICATION DETAIL
S3707
ADD DATA TO NOTIFICATION SET UP
S3708
TRUE
S3709
FALSE
END

FIG. 38

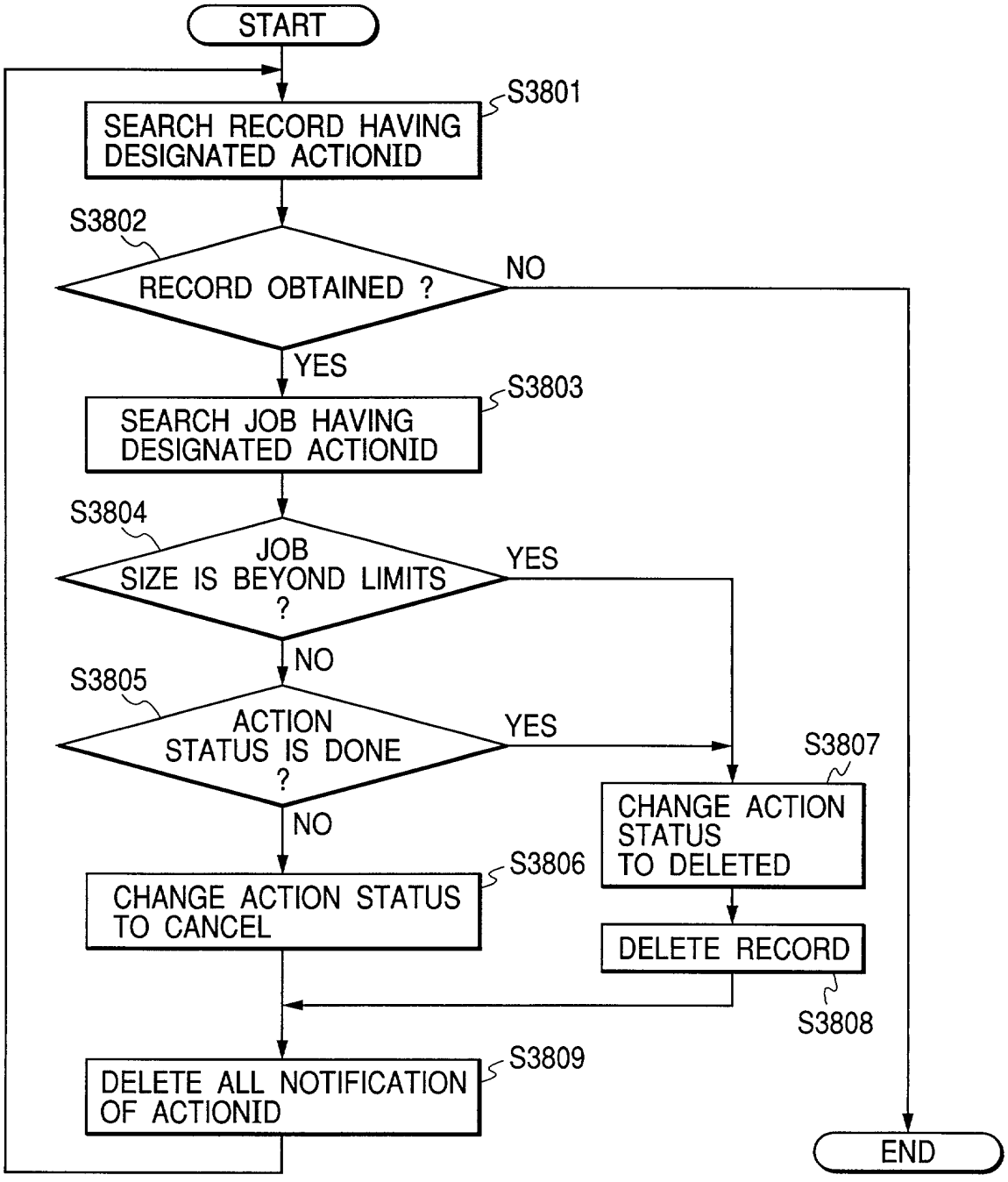

START
S3801
SEARCH RECORD HAVING DESIGNATED ACTIONID
S3802
RECORD OBTAINED ?
NO
YES
S3803
SEARCH JOB HAVING DESIGNATED ACTIONID
S3804
JOB SIZE IS BEYOND LIMITS ?
YES
NO
S3805
ACTION STATUS IS DONE ?
YES
NO
S3807
CHANGE ACTION STATUS TO DELETED
S3806
CHANGE ACTION STATUS TO CANCEL
DELETE RECORD
S3808
S3809
DELETE ALL NOTIFICATION OF ACTIONID
END

FIG. 39

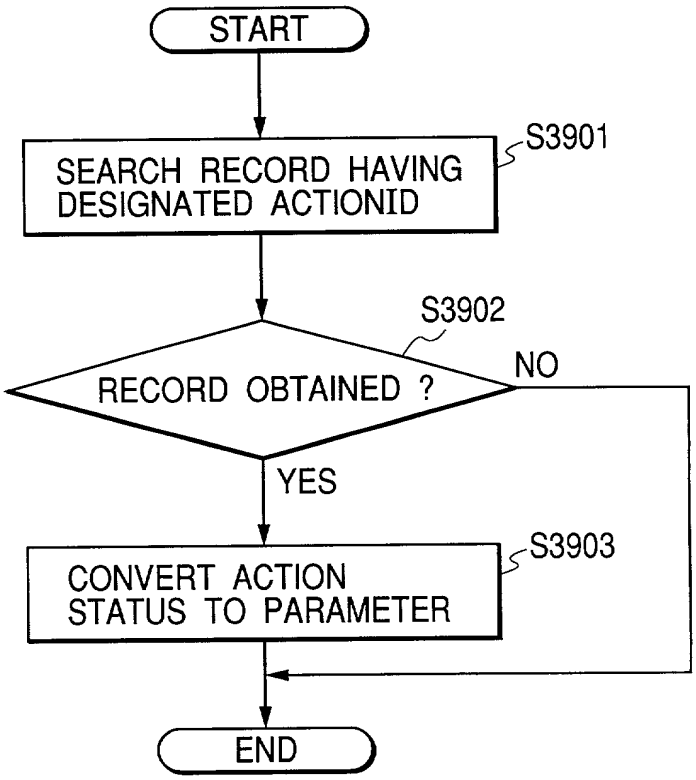
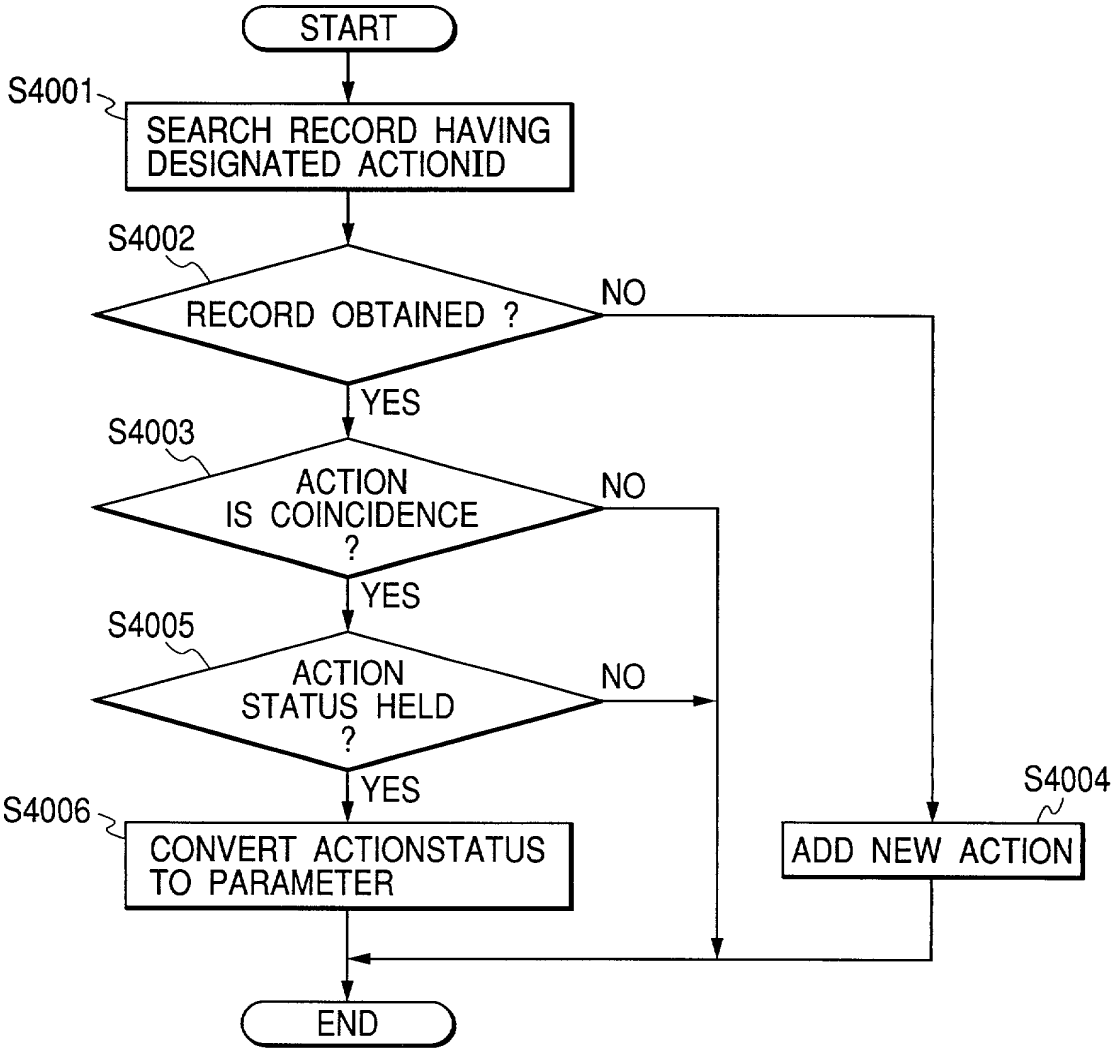

START
SEARCH RECORD HAVING DESIGNATED ACTIONID
S3901
S3902
RECORD OBTAINED ?
NO
YES
CONVERT ACTION STATUS TO PARAMETER
S3903
END

FIG. 40



09170656 - JP1498

0917055 - 1014 - 05

FIG. 41

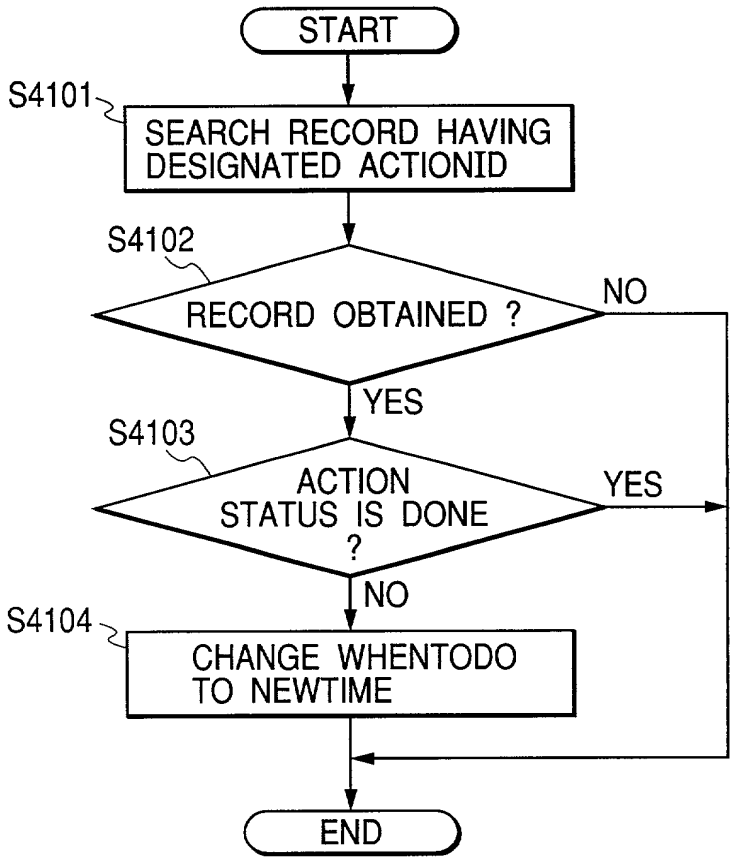
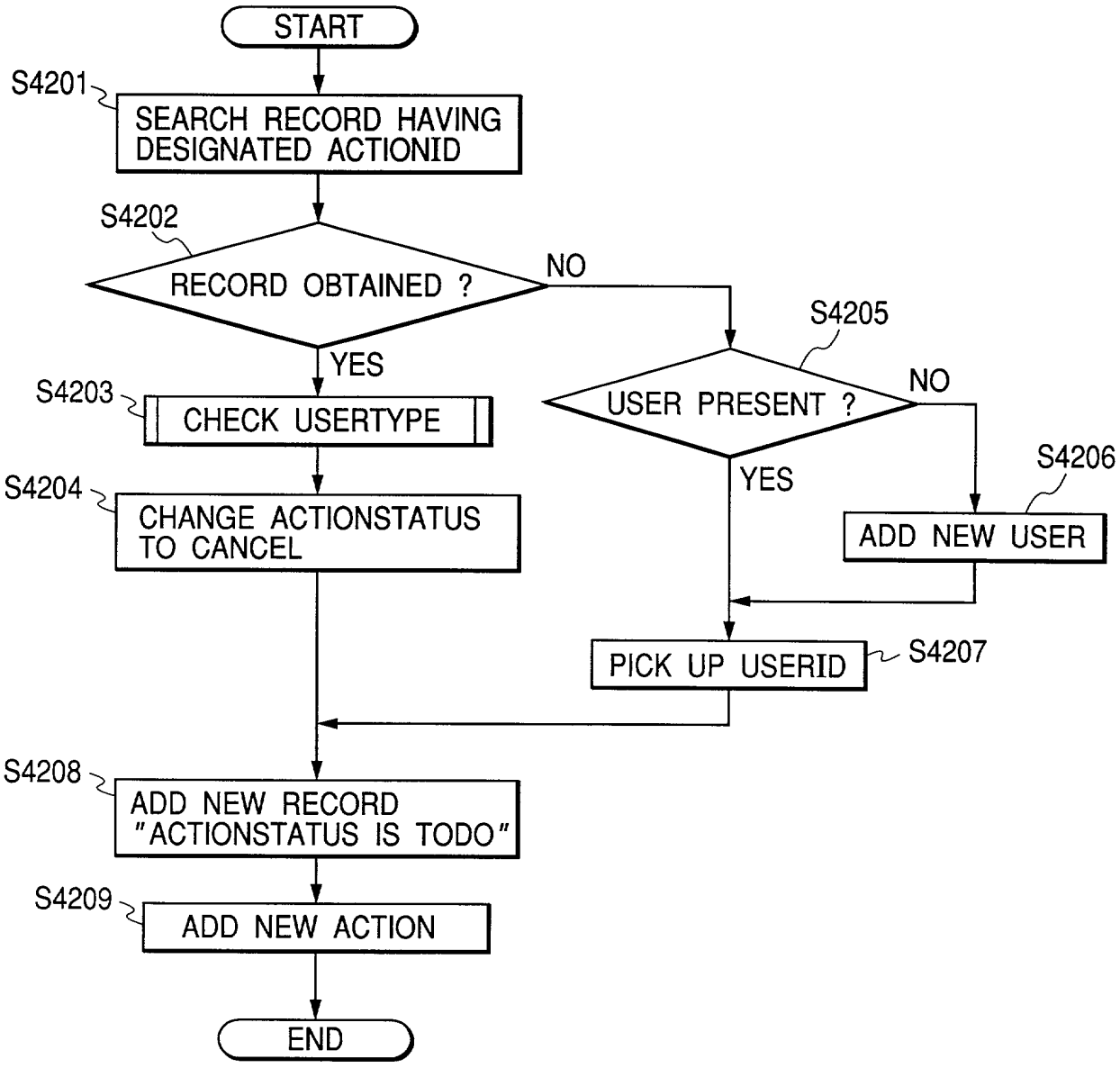


FIG. 42



US 7,055,105 B2

FIG. 43

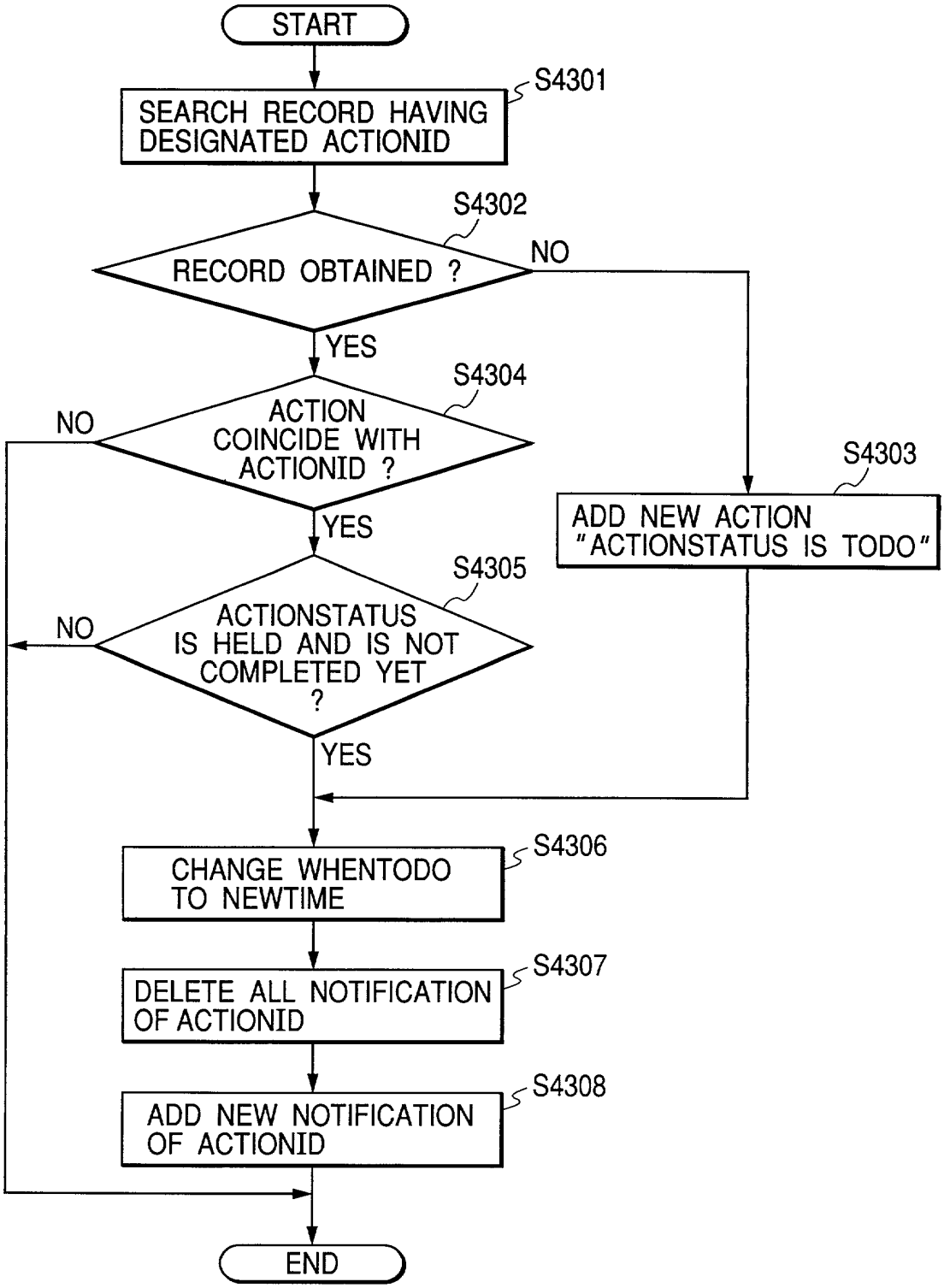
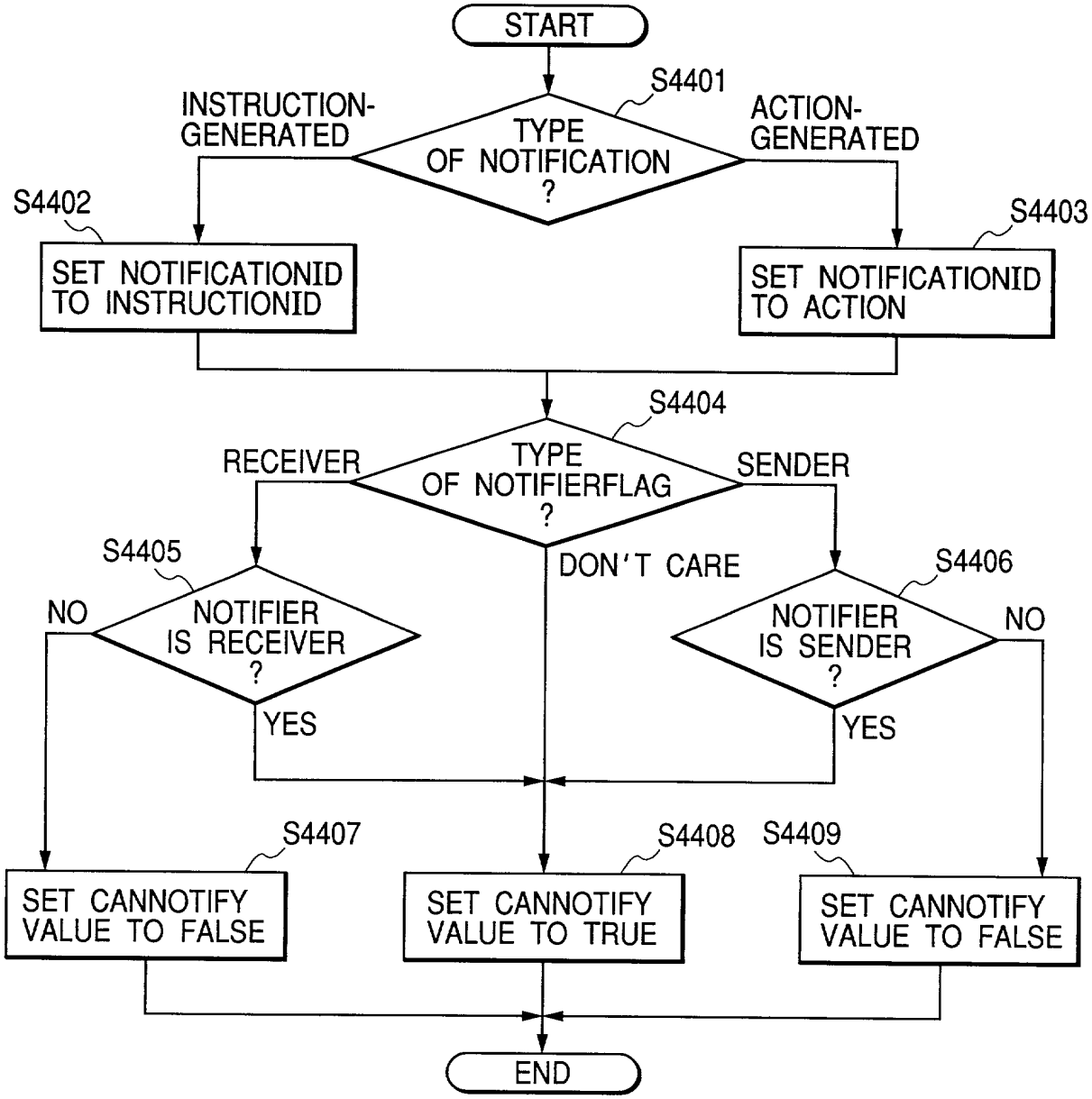
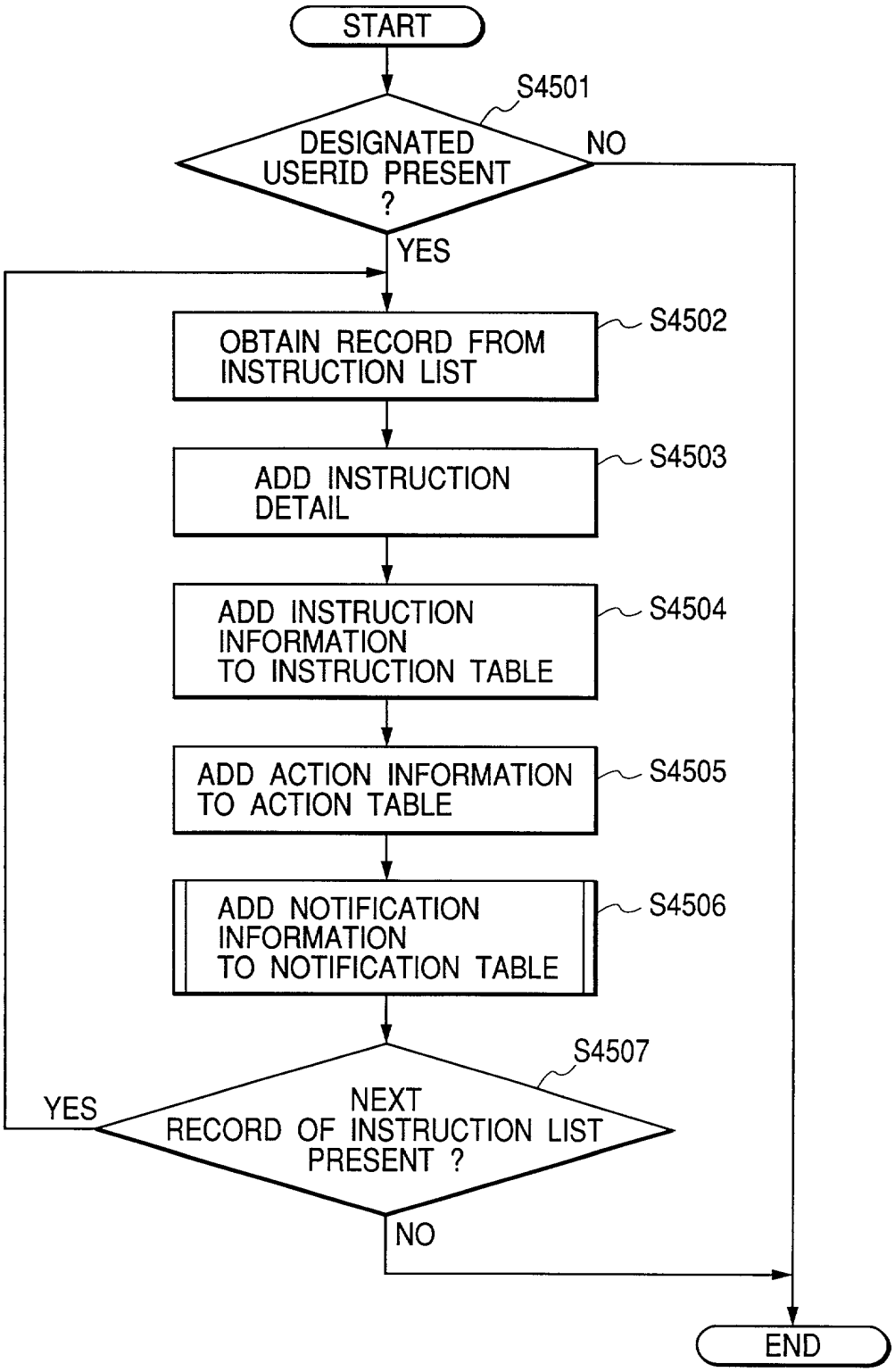

START
S4301
SEARCH RECORD HAVING DESIGNATED ACTIONID
S4302
RECORD OBTAINED ?
NO
YES
S4304
ACTION COINCIDE WITH ACTIONID ?
NO
YES
S4303
ADD NEW ACTION "ACTIONSTATUS IS TODO"
S4305
ACTIONSTATUS IS HELD AND IS NOT COMPLETED YET ?
NO
YES
S4306
CHANGE WHENTODO TO NEWTIME
S4307
DELETE ALL NOTIFICATION OF ACTIONID
S4308
ADD NEW NOTIFICATION OF ACTIONID
END

FIG. 44



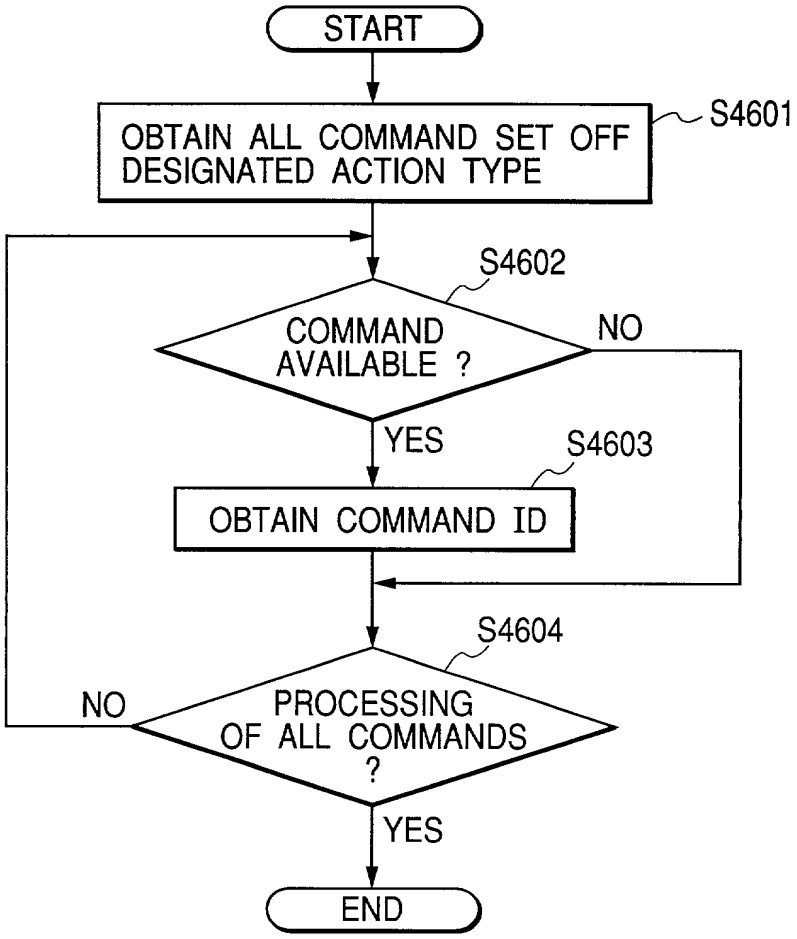
EP 1 705 569 A1

FIG. 45



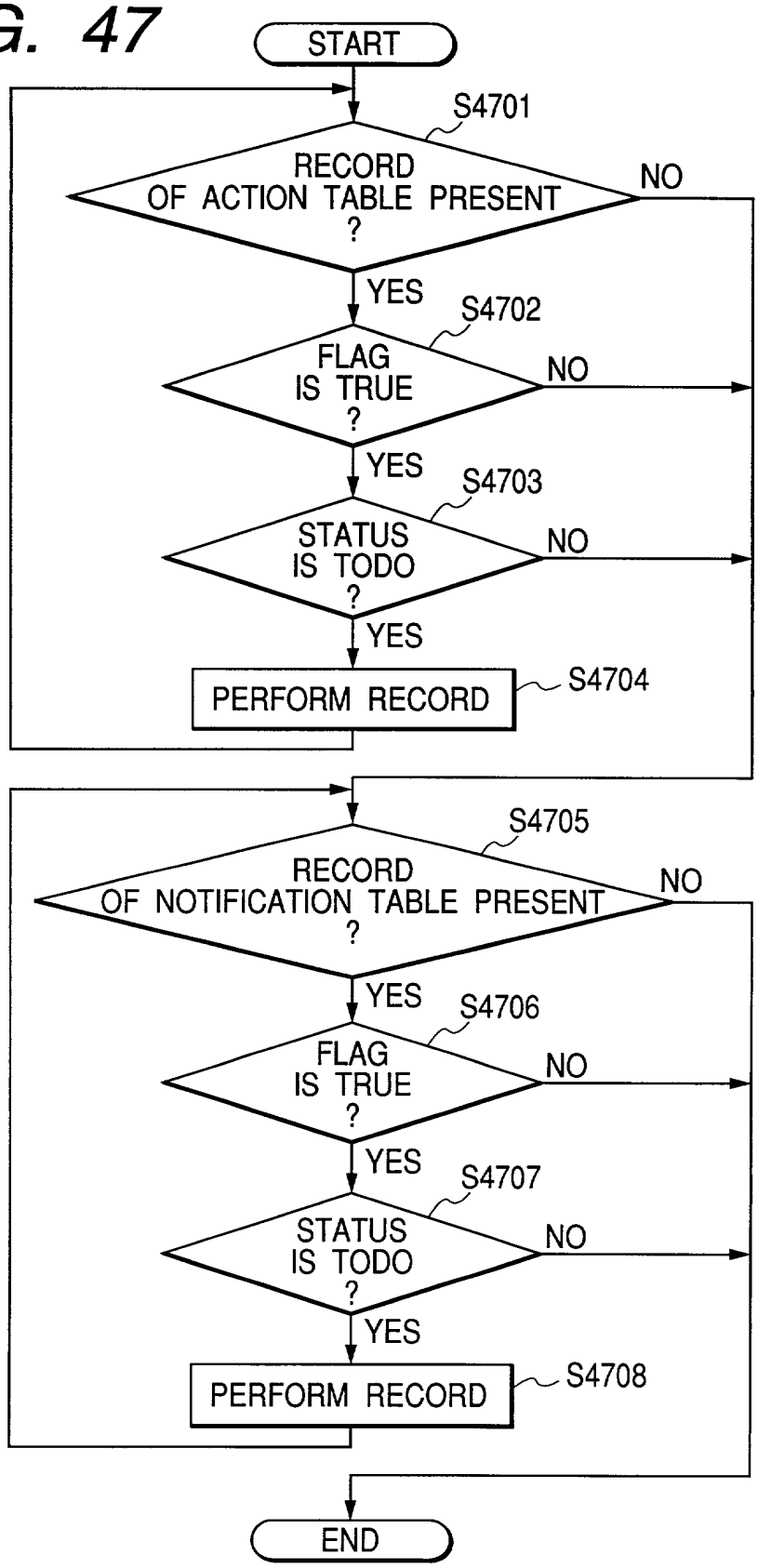
09170656 - 101496

FIG. 46



EP 1 705 559 A1 06-09-2006

FIG. 47



0270705556 : 10140

FIG. 48

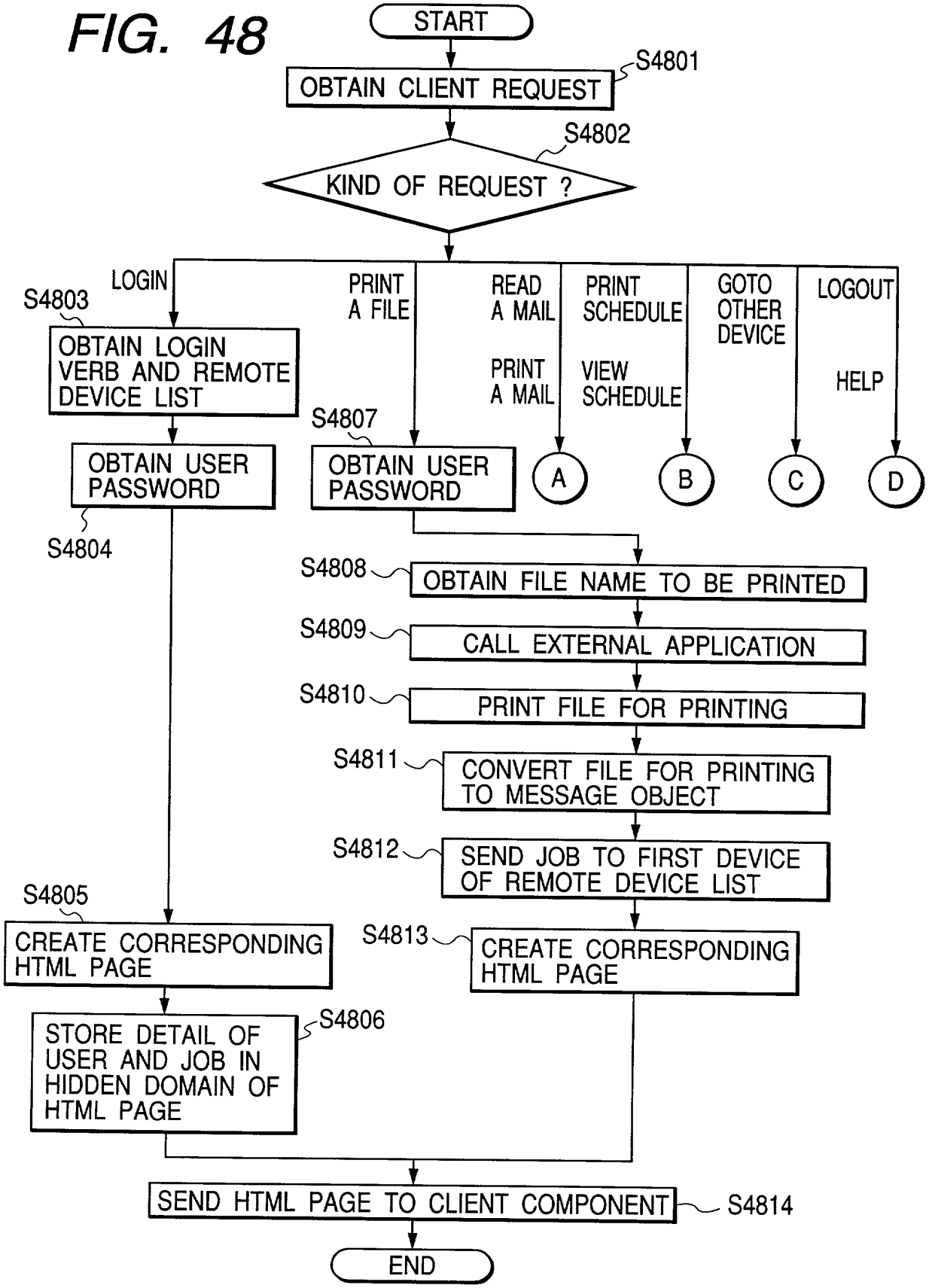
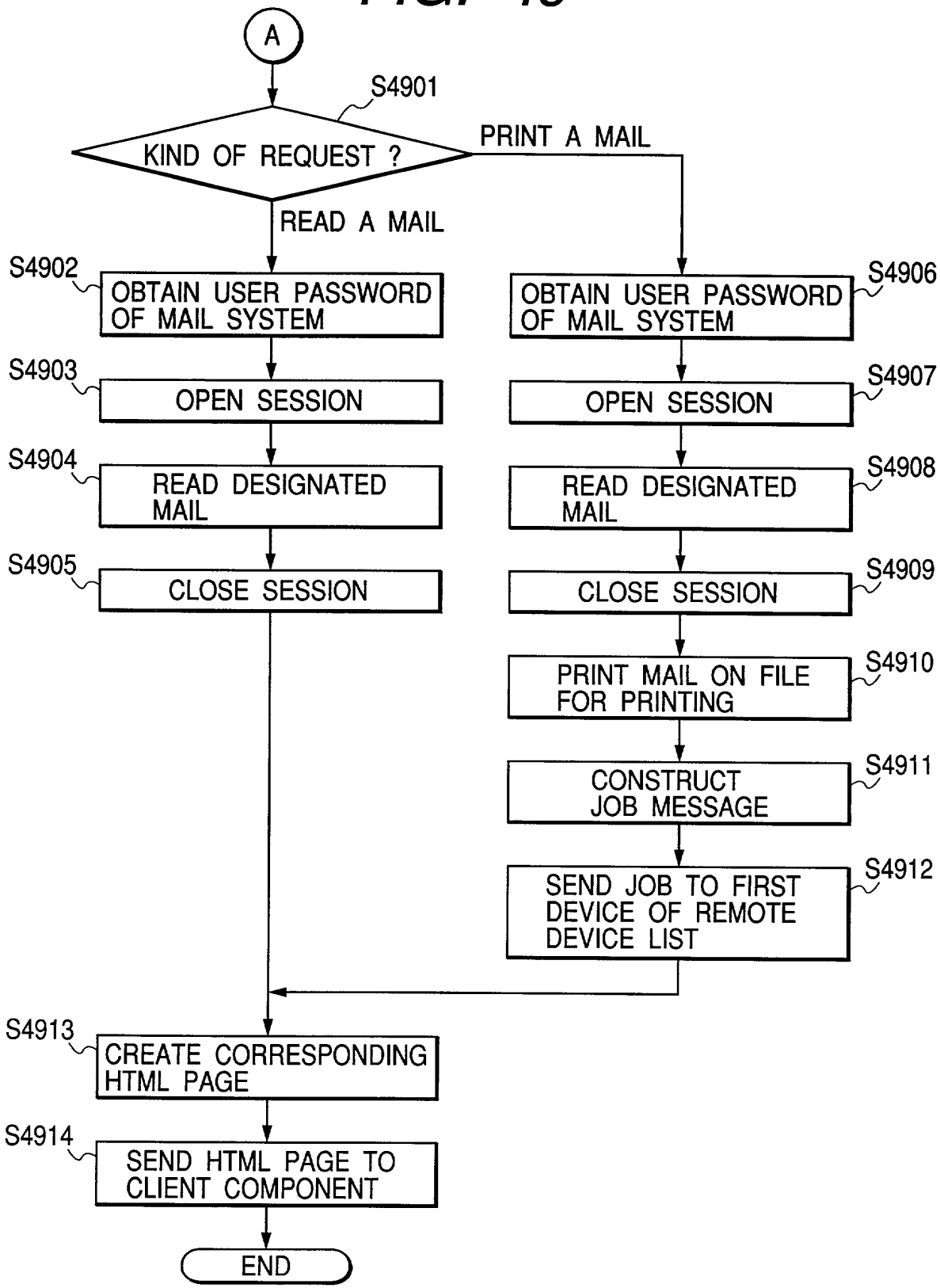

START
OBTAIN CLIENT REQUEST
S4801
S4802
KIND OF REQUEST ?
LOGIN
PRINT A FILE
READ A MAIL
PRINT A MAIL
PRINT SCHEDULE
VIEW SCHEDULE
GOTO OTHER DEVICE
LOGOUT
HELP
S4803
OBTAIN LOGIN VERB AND REMOTE DEVICE LIST
OBTAIN USER PASSWORD
S4804
S4807
OBTAIN USER PASSWORD
A
B
C
D
S4808
OBTAIN FILE NAME TO BE PRINTED
S4809
CALL EXTERNAL APPLICATION
S4810
PRINT FILE FOR PRINTING
S4811
CONVERT FILE FOR PRINTING TO MESSAGE OBJECT
S4812
SEND JOB TO FIRST DEVICE OF REMOTE DEVICE LIST
S4805
CREATE CORRESPONDING HTML PAGE
S4813
CREATE CORRESPONDING HTML PAGE
S4806
STORE DETAIL OF USER AND JOB IN HIDDEN DOMAIN OF HTML PAGE
SEND HTML PAGE TO CLIENT COMPONENT
S4814
END

FIG. 49



EP 1 705 569 A2

FIG. 50

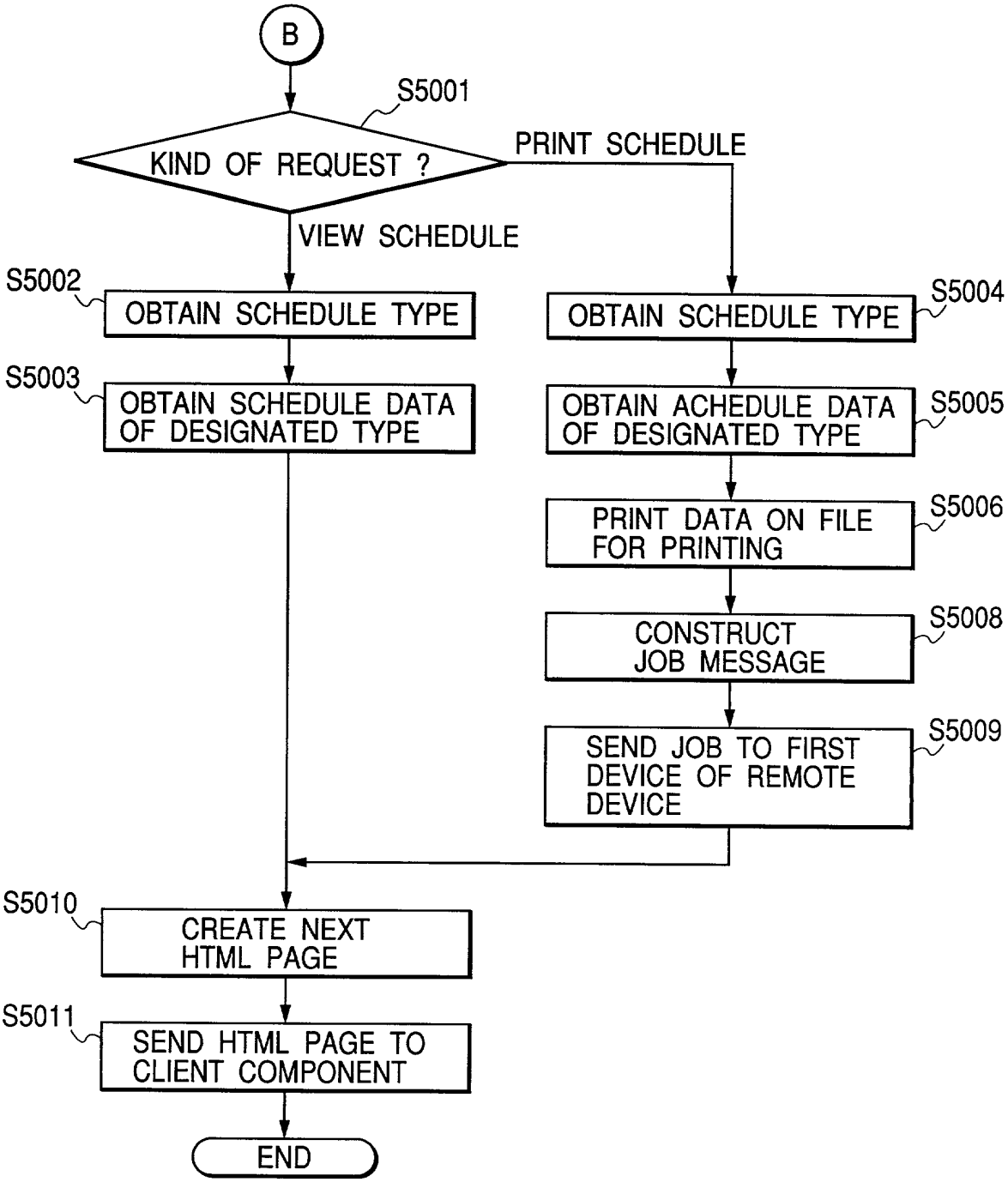

B
S5001
KIND OF REQUEST ?
PRINT SCHEDULE
VIEW SCHEDULE
S5002
OBTAIN SCHEDULE TYPE
S5003
OBTAIN SCHEDULE DATA OF DESIGNATED TYPE
S5004
OBTAIN SCHEDULE TYPE
S5005
OBTAIN ACHEDULE DATA OF DESIGNATED TYPE
S5006
PRINT DATA ON FILE FOR PRINTING
S5008
CONSTRUCT JOB MESSAGE
S5009
SEND JOB TO FIRST DEVICE OF REMOTE DEVICE
S5010
CREATE NEXT HTML PAGE
S5011
SEND HTML PAGE TO CLIENT COMPONENT
END

FIG. 51

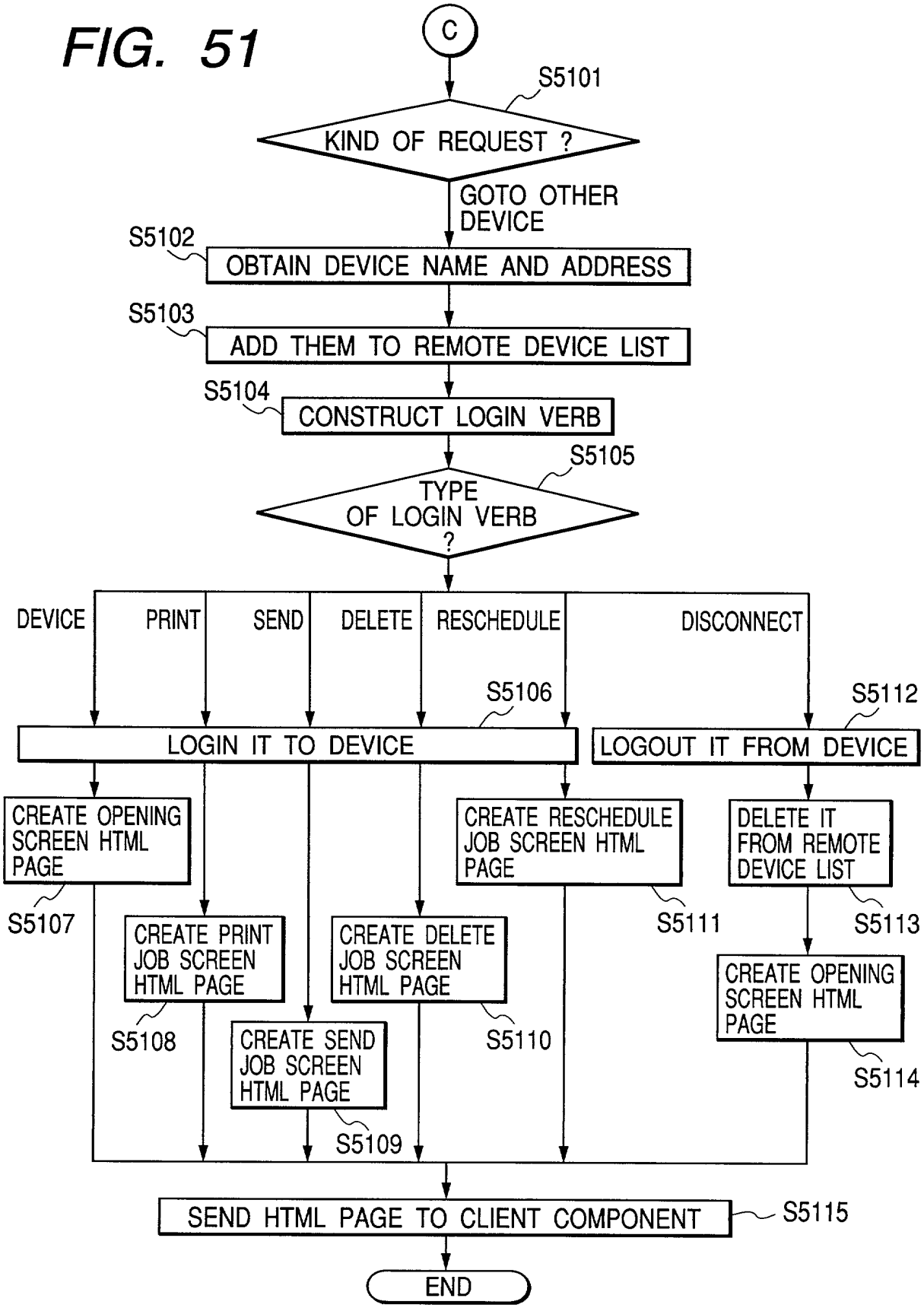

C
S5101
KIND OF REQUEST ?
GOTO OTHER DEVICE
S5102
OBTAIN DEVICE NAME AND ADDRESS
S5103
ADD THEM TO REMOTE DEVICE LIST
S5104
CONSTRUCT LOGIN VERB
S5105
TYPE OF LOGIN VERB ?
DEVICE
PRINT
SEND
DELETE
RESCHEDULE
DISCONNECT
S5106
LOGIN IT TO DEVICE
S5112
LOGOUT IT FROM DEVICE
CREATE OPENING SCREEN HTML PAGE
S5107
CREATE PRINT JOB SCREEN HTML PAGE
S5108
CREATE SEND JOB SCREEN HTML PAGE
S5109
CREATE DELETE JOB SCREEN HTML PAGE
S5110
CREATE RESCHEDULE JOB SCREEN HTML PAGE
S5111
DELETE IT FROM REMOTE DEVICE LIST
S5113
CREATE OPENING SCREEN HTML PAGE
S5114
SEND HTML PAGE TO CLIENT COMPONENT
S5115
END

FIG. 52

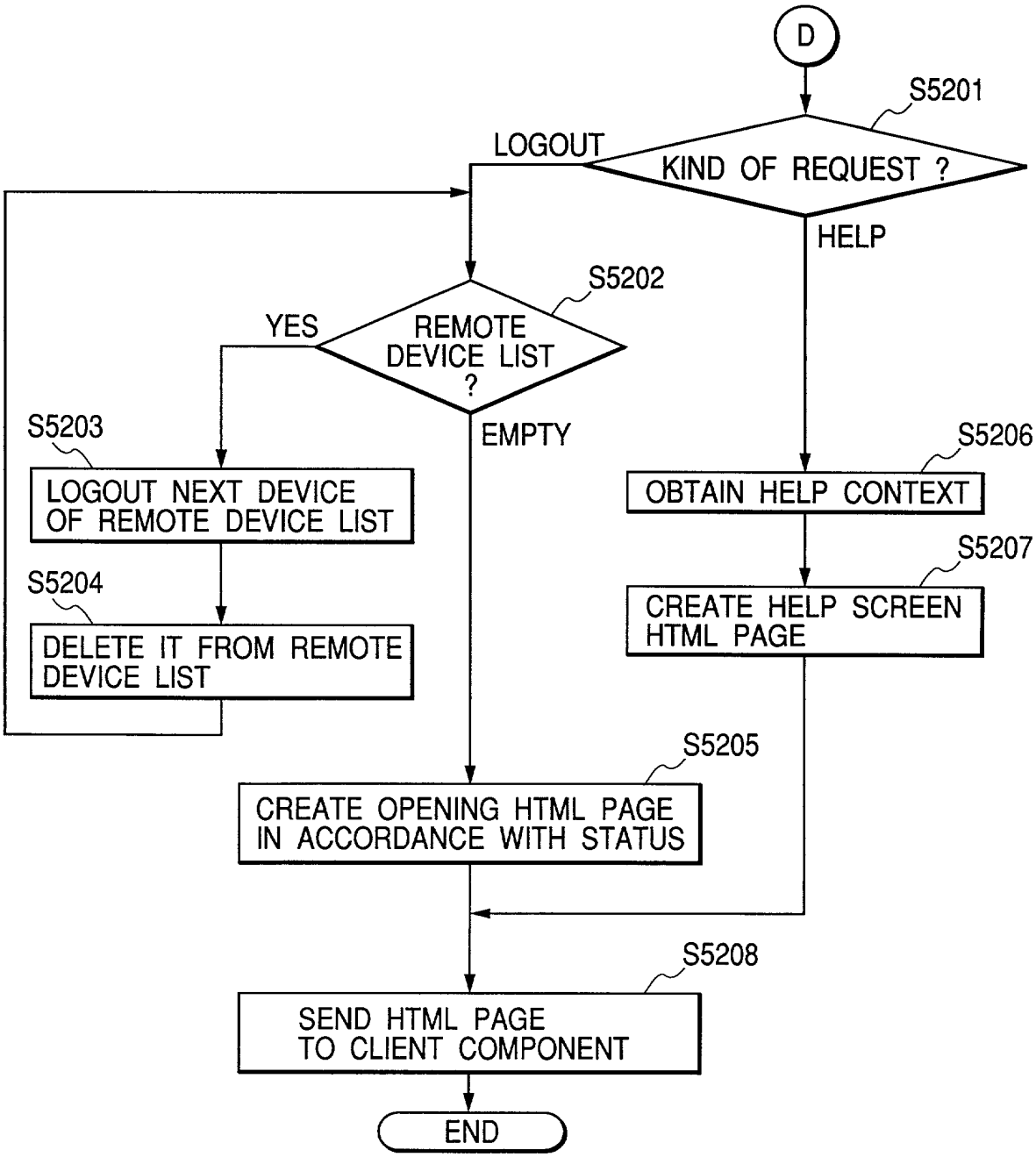

D
S5201
KIND OF REQUEST ?
LOGOUT
HELP
S5202
REMOTE DEVICE LIST ?
YES
EMPTY
S5203
LOGOUT NEXT DEVICE OF REMOTE DEVICE LIST
S5204
DELETE IT FROM REMOTE DEVICE LIST
S5206
OBTAIN HELP CONTEXT
S5207
CREATE HELP SCREEN HTML PAGE
S5205
CREATE OPENING HTML PAGE IN ACCORDANCE WITH STATUS
S5208
SEND HTML PAGE TO CLIENT COMPONENT
END

FIG. 53

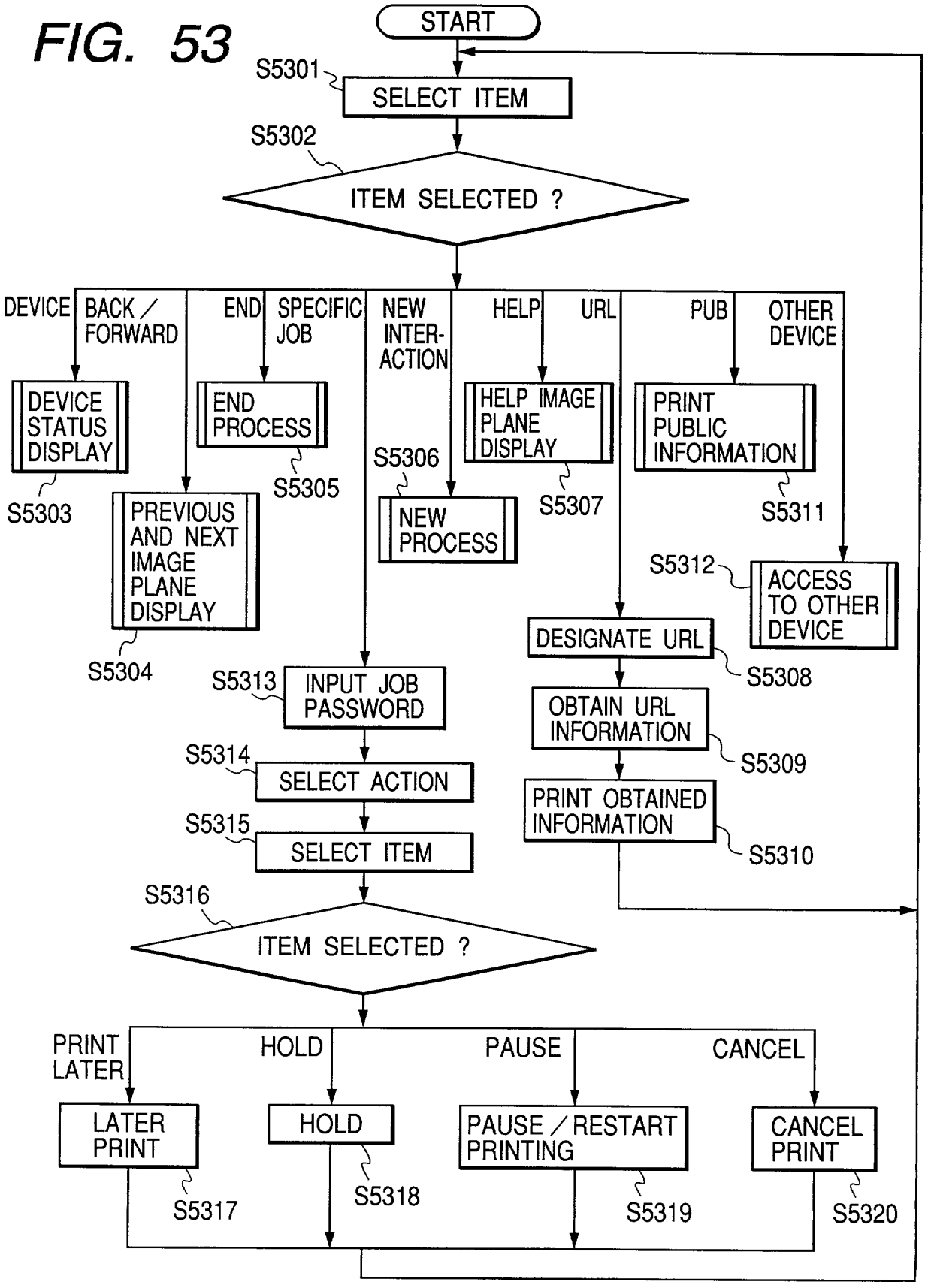
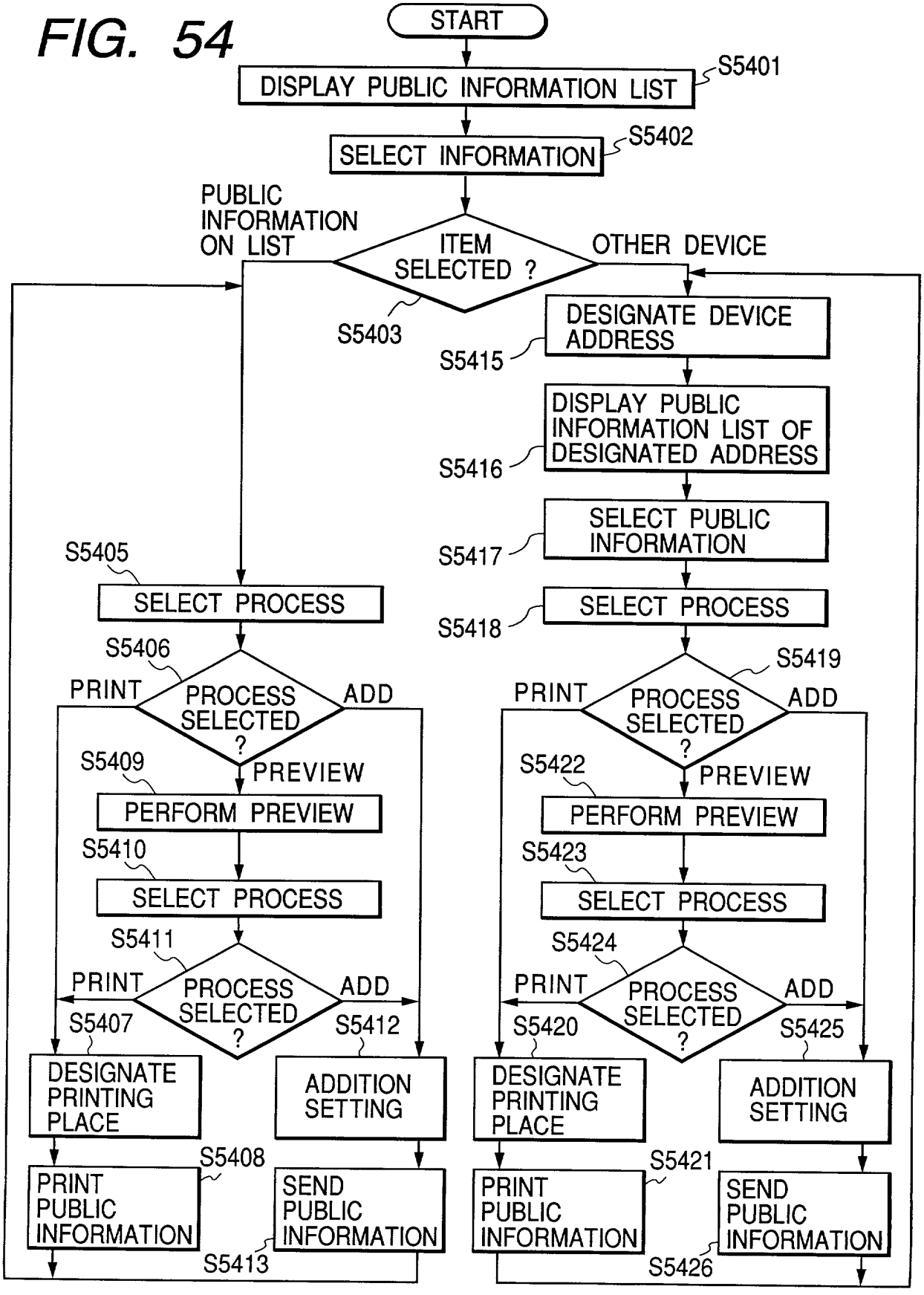

START
S5301
SELECT ITEM
S5302
ITEM SELECTED ?
DEVICE
BACK / FORWARD
END
SPECIFIC JOB
NEW INTER-ACTION
HELP
URL
PUB
OTHER DEVICE
DEVICE STATUS DISPLAY
S5303
PREVIOUS AND NEXT IMAGE PLANE DISPLAY
S5304
END PROCESS
S5305
S5306
NEW PROCESS
HELP IMAGE PLANE DISPLAY
S5307
PRINT PUBLIC INFORMATION
S5311
S5312
ACCESS TO OTHER DEVICE
DESIGNATE URL
S5308
OBTAIN URL INFORMATION
S5309
PRINT OBTAINED INFORMATION
S5310
S5313
INPUT JOB PASSWORD
S5314
SELECT ACTION
S5315
SELECT ITEM
S5316
ITEM SELECTED ?
PRINT LATER
HOLD
PAUSE
CANCEL
LATER PRINT
S5317
HOLD
S5318
PAUSE / RESTART PRINTING
S5319
CANCEL PRINT
S5320

FIG. 54



09170656 - 101498

09170656 - 10149B

FIG. 55

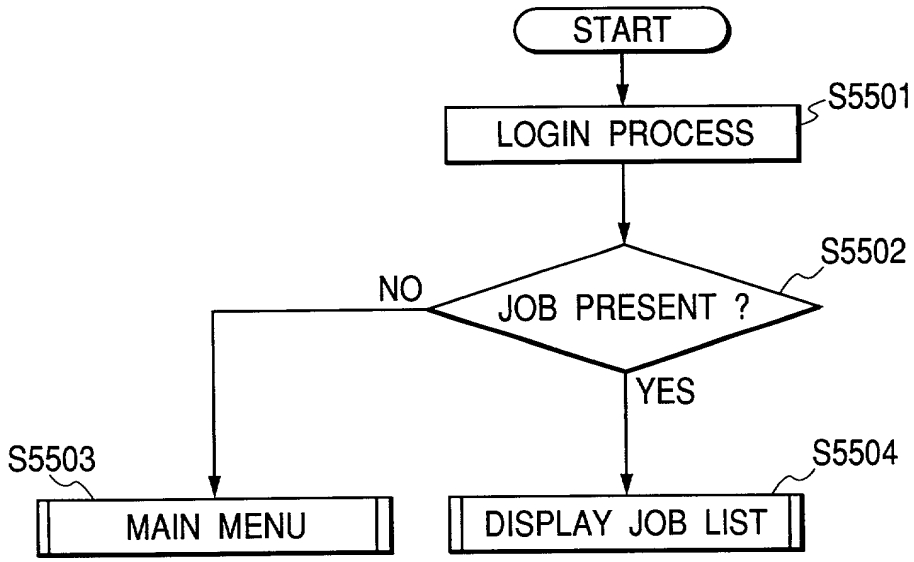


FIG. 56

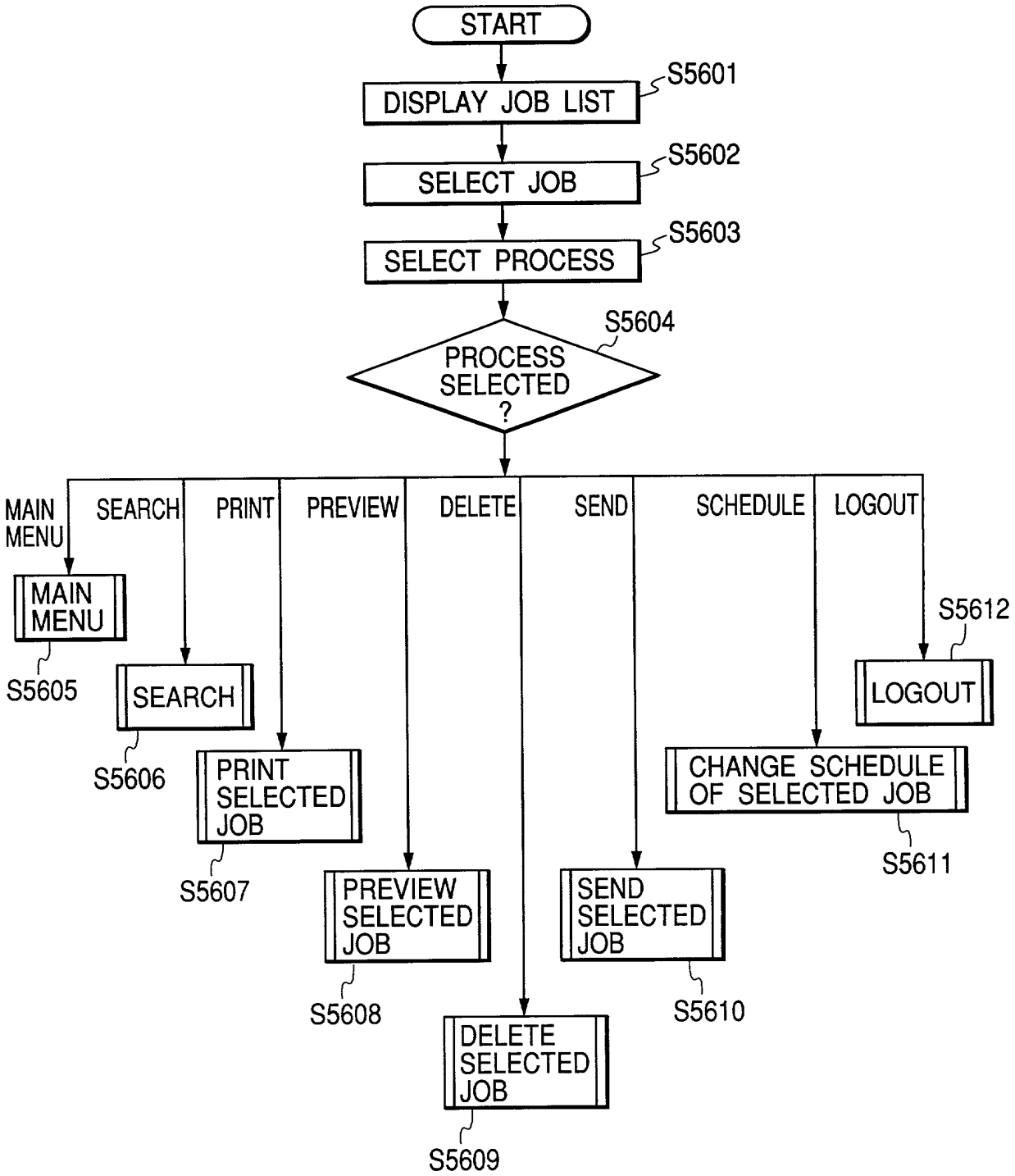
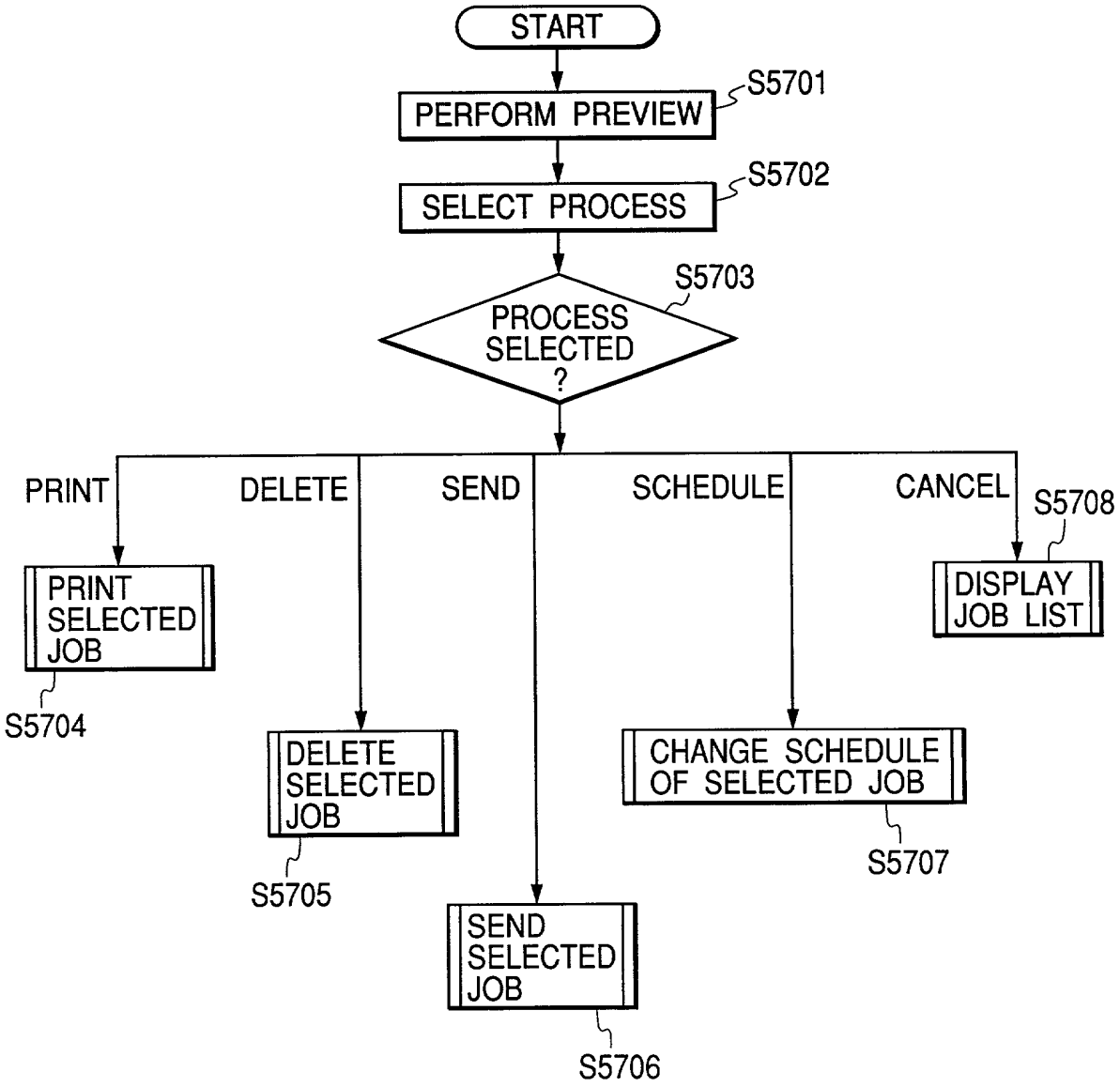
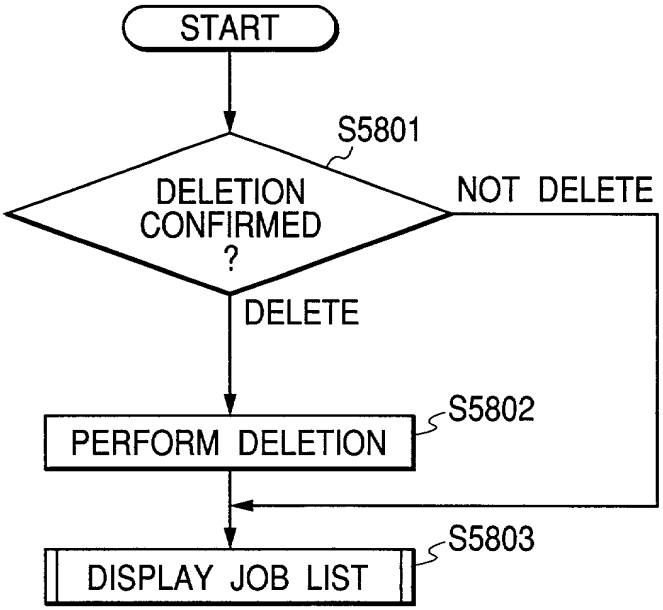

START
DISPLAY JOB LIST
S5601
SELECT JOB
S5602
SELECT PROCESS
S5603
PROCESS SELECTED ?
S5604
MAIN MENU
SEARCH
PRINT
PREVIEW
DELETE
SEND
SCHEDULE
LOGOUT
MAIN MENU
S5605
SEARCH
S5606
PRINT SELECTED JOB
S5607
PREVIEW SELECTED JOB
S5608
DELETE SELECTED JOB
S5609
SEND SELECTED JOB
S5610
CHANGE SCHEDULE OF SELECTED JOB
S5611
LOGOUT
S5612

FIG. 57


START
PERFORM PREVIEW
S5701
SELECT PROCESS
S5702
PROCESS SELECTED ?
S5703
PRINT
DELETE
SEND
SCHEDULE
CANCEL
S5708
PRINT SELECTED JOB
S5704
DELETE SELECTED JOB
S5705
SEND SELECTED JOB
S5706
CHANGE SCHEDULE OF SELECTED JOB
S5707
DISPLAY JOB LIST

Patent Application Publication

FIG. 58



EP 3 705 956 A1 20200916

FIG. 59

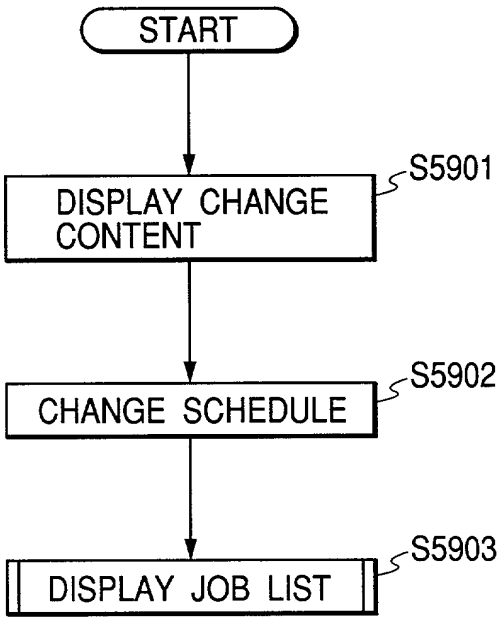


FIG. 60

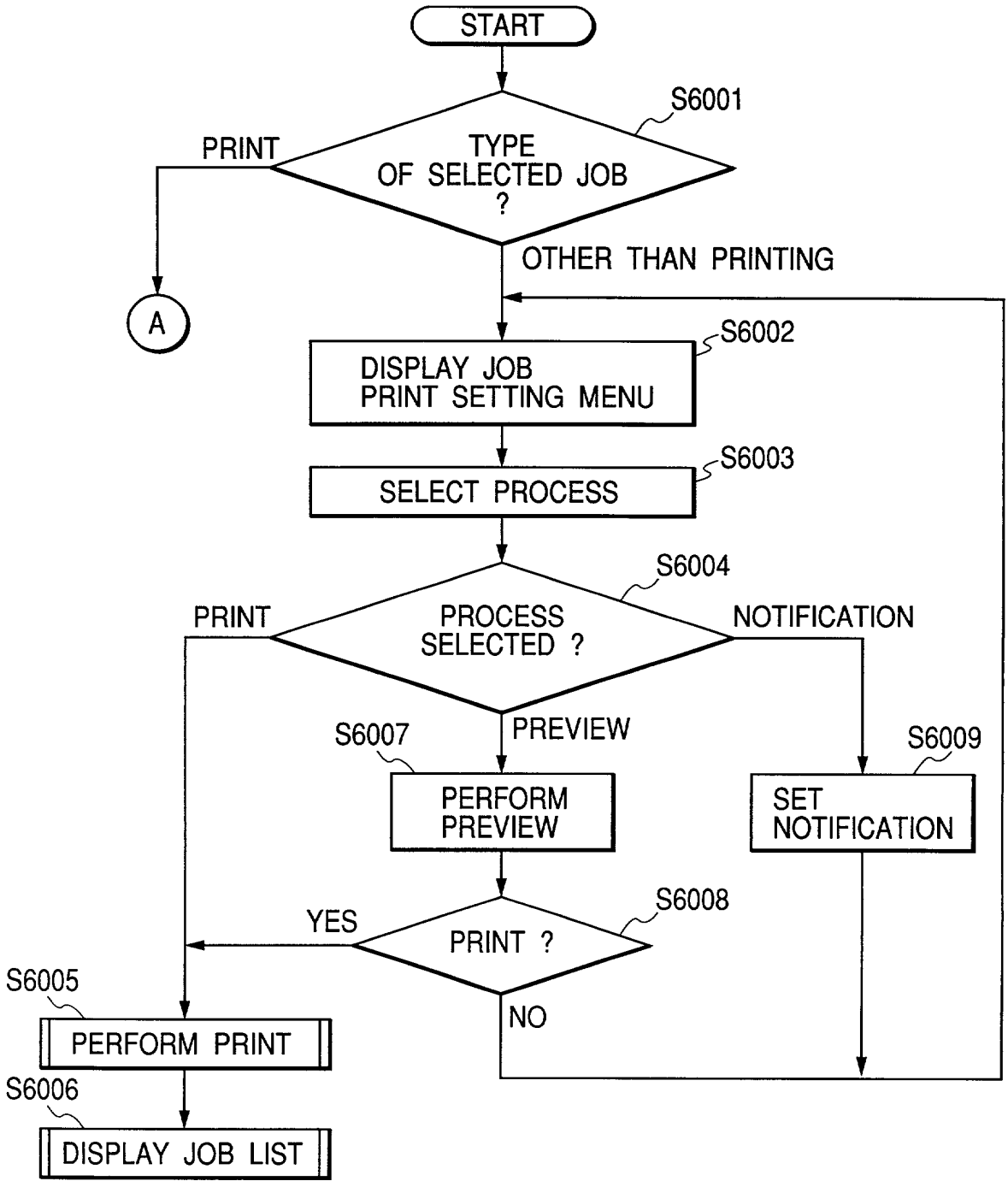

START
S6001
TYPE OF SELECTED JOB ?
PRINT
OTHER THAN PRINTING
A
S6002
DISPLAY JOB PRINT SETTING MENU
S6003
SELECT PROCESS
S6004
PROCESS SELECTED ?
PRINT
NOTIFICATION
PREVIEW
S6007
PERFORM PREVIEW
S6009
SET NOTIFICATION
S6008
PRINT ?
YES
NO
S6005
PERFORM PRINT
S6006
DISPLAY JOB LIST

FIG. 61

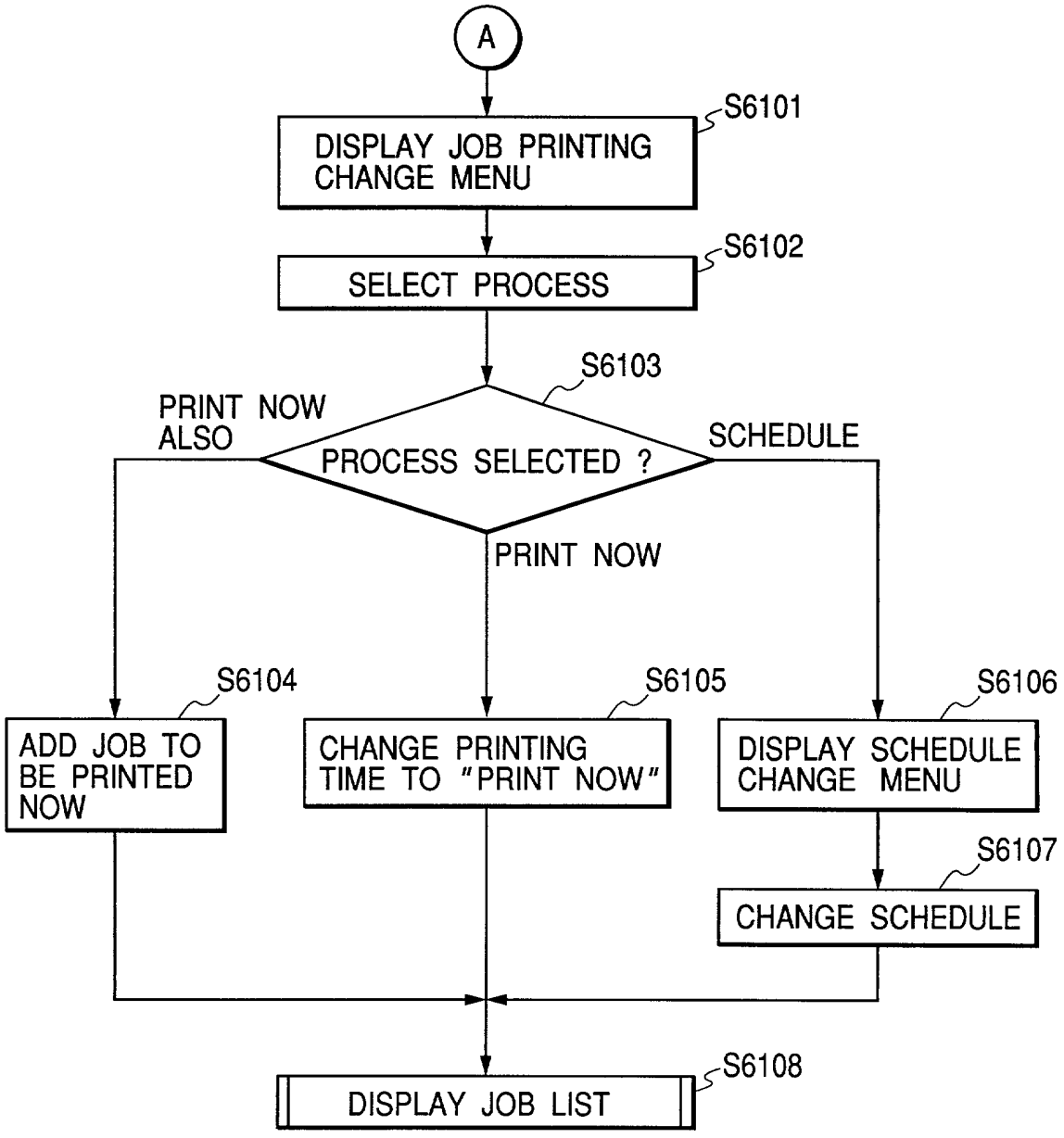

A
S6101
DISPLAY JOB PRINTING CHANGE MENU
S6102
SELECT PROCESS
S6103
PRINT NOW ALSO
PROCESS SELECTED ?
SCHEDULE
PRINT NOW
S6104
ADD JOB TO BE PRINTED NOW
S6105
CHANGE PRINTING TIME TO "PRINT NOW"
S6106
DISPLAY SCHEDULE CHANGE MENU
S6107
CHANGE SCHEDULE
S6108
DISPLAY JOB LIST

FIG. 62

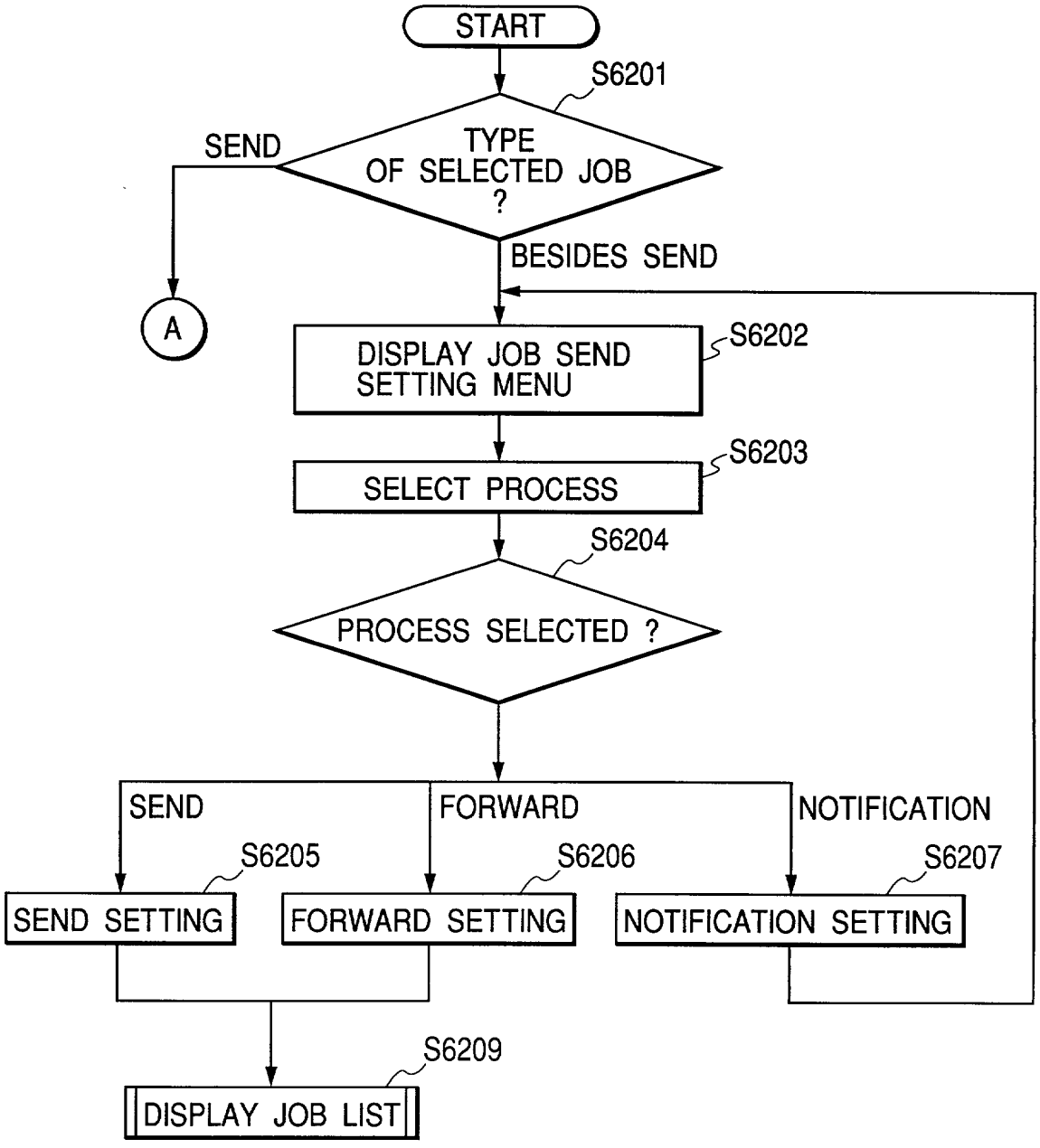

START
S6201
TYPE OF SELECTED JOB ?
SEND
BESIDES SEND
A
DISPLAY JOB SEND SETTING MENU
S6202
SELECT PROCESS
S6203
S6204
PROCESS SELECTED ?
SEND
FORWARD
NOTIFICATION
S6205
S6206
S6207
SEND SETTING
FORWARD SETTING
NOTIFICATION SETTING
S6209
DISPLAY JOB LIST

FIG. 63

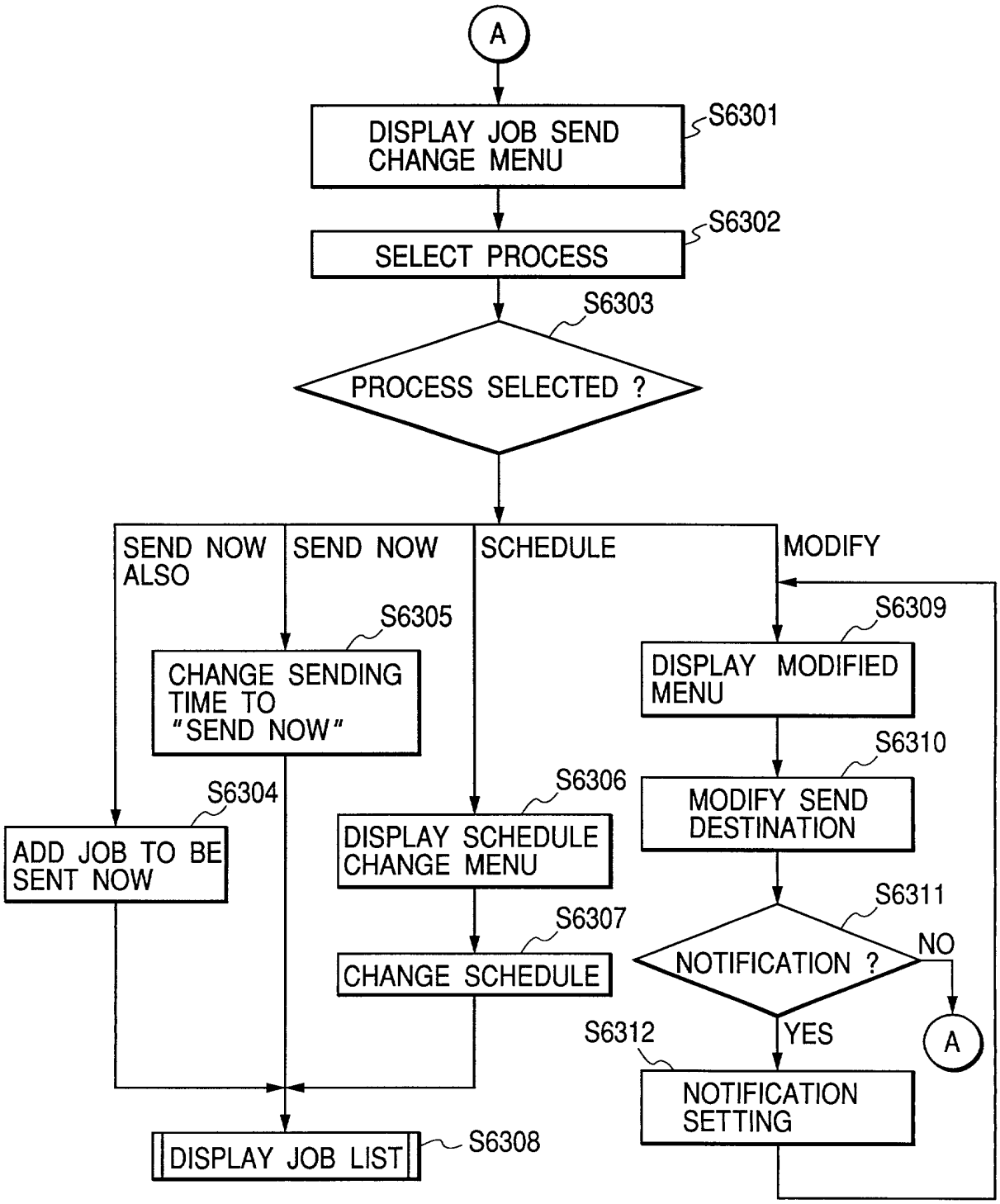

A
DISPLAY JOB SEND CHANGE MENU
S6301
SELECT PROCESS
S6302
S6303
PROCESS SELECTED ?
SEND NOW ALSO
SEND NOW
SCHEDULE
MODIFY
S6305
CHANGE SENDING TIME TO "SEND NOW"
S6309
DISPLAY MODIFIED MENU
S6310
MODIFY SEND DESTINATION
S6304
ADD JOB TO BE SENT NOW
S6306
DISPLAY SCHEDULE CHANGE MENU
S6311
NOTIFICATION ?
NO
S6307
CHANGE SCHEDULE
YES
A
S6312
NOTIFICATION SETTING
DISPLAY JOB LIST
S6308

FIG. 64

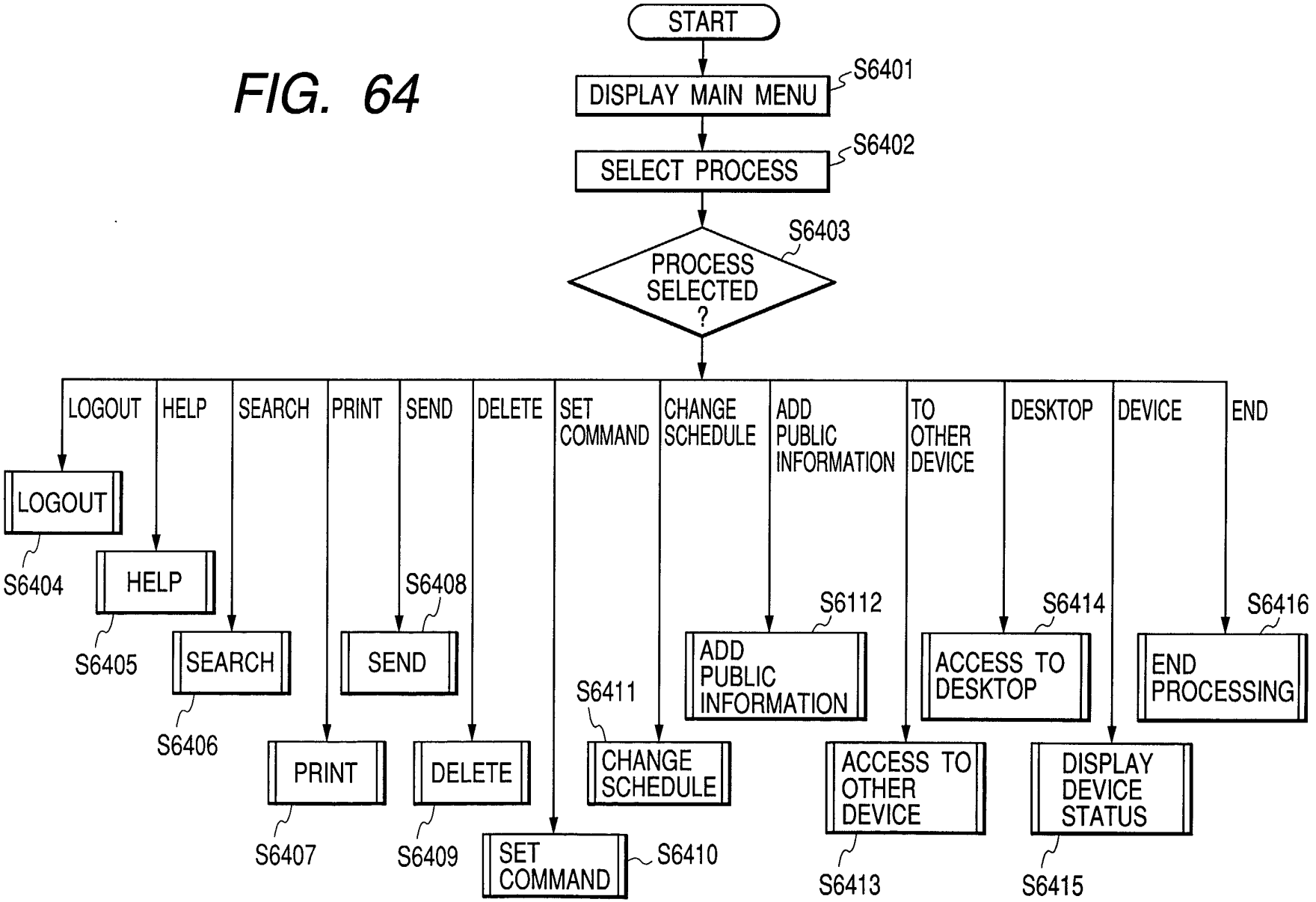

START
DISPLAY MAIN MENU
S6401
SELECT PROCESS
S6402
PROCESS SELECTED ?
S6403
LOGOUT
HELP
SEARCH
PRINT
SEND
DELETE
SET COMMAND
CHANGE SCHEDULE
ADD PUBLIC INFORMATION
TO OTHER DEVICE
DESKTOP
DEVICE
END
LOGOUT
S6404
HELP
S6405
SEARCH
S6406
PRINT
S6407
SEND
S6408
DELETE
S6409
SET COMMAND
S6410
CHANGE SCHEDULE
S6411
ADD PUBLIC INFORMATION
S6112
ACCESS TO OTHER DEVICE
S6413
ACCESS TO DESKTOP
S6414
DISPLAY DEVICE STATUS
S6415
END PROCESSING
S6416

FIG. 65

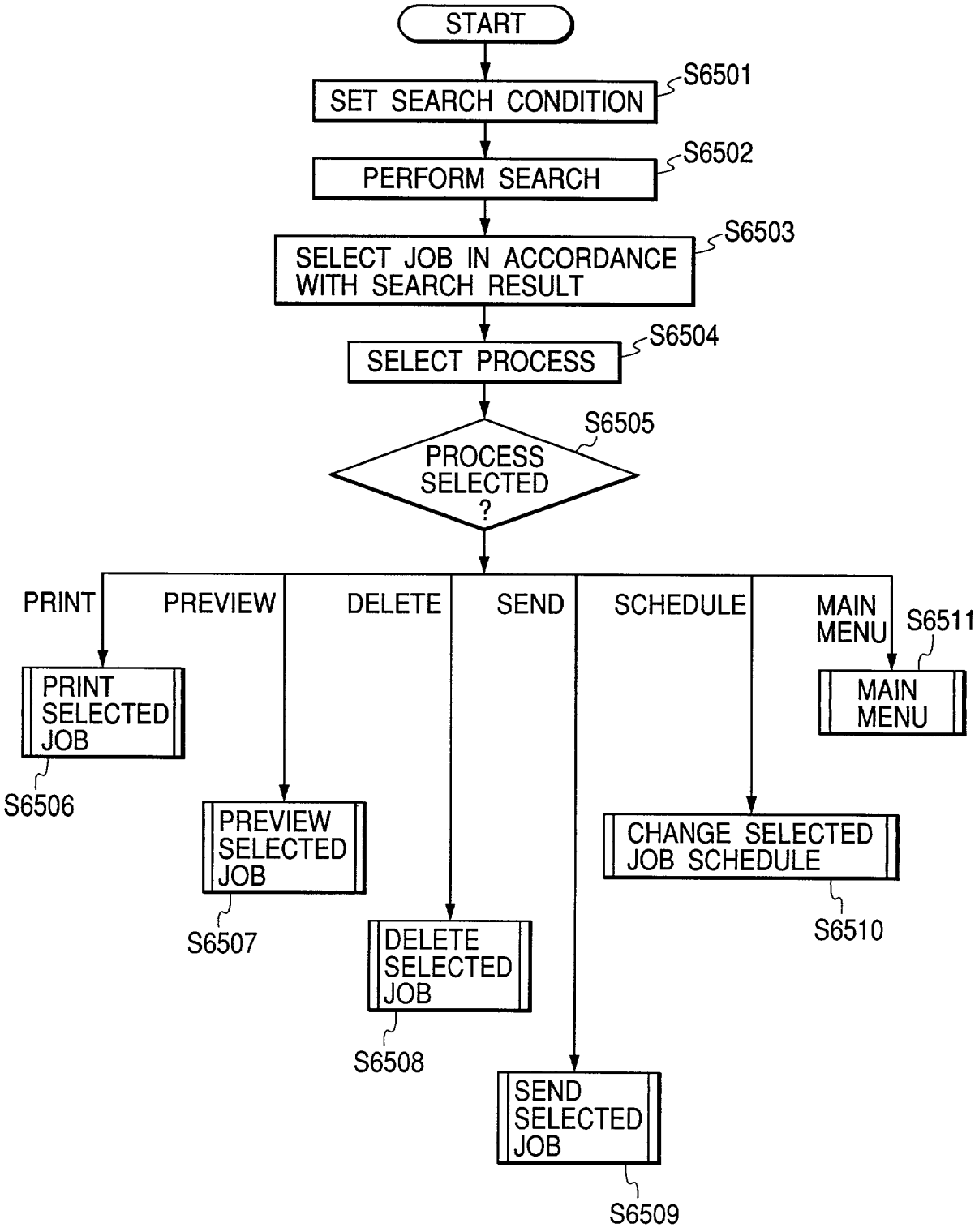
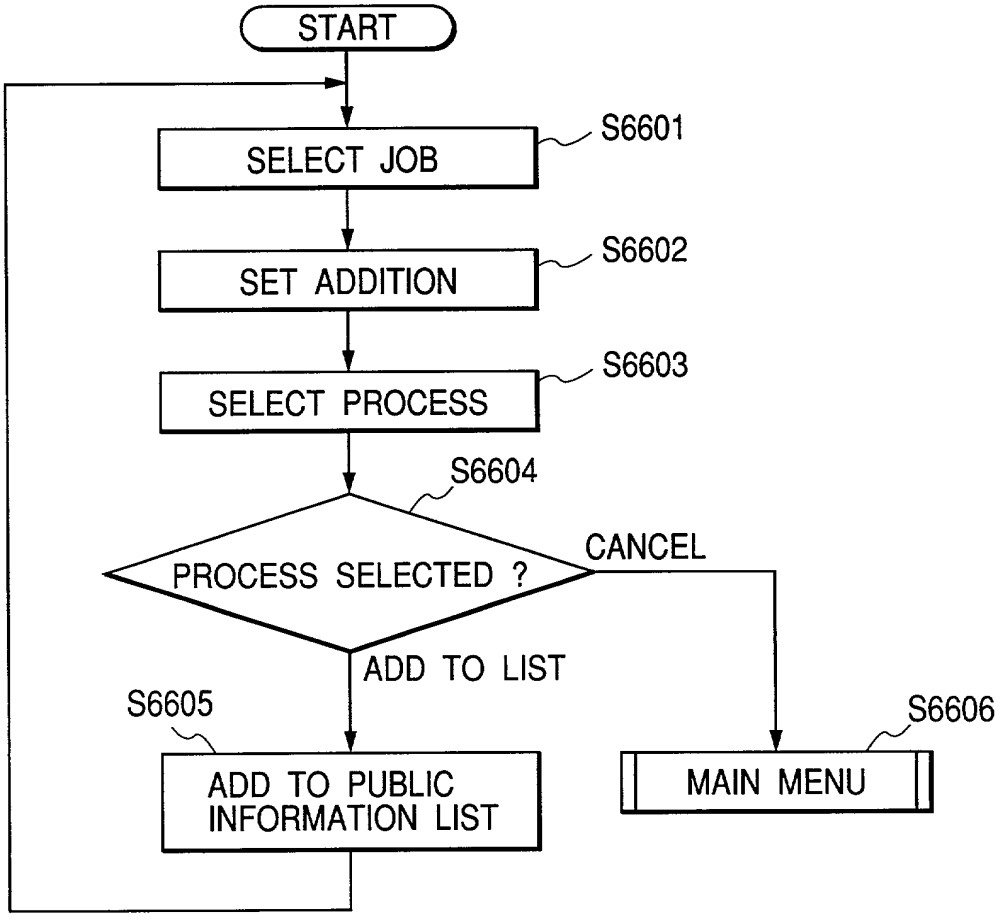

START
SET SEARCH CONDITION
S6501
PERFORM SEARCH
S6502
SELECT JOB IN ACCORDANCE WITH SEARCH RESULT
S6503
SELECT PROCESS
S6504
PROCESS SELECTED ?
S6505
PRINT
PREVIEW
DELETE
SEND
SCHEDULE
MAIN MENU
S6511
PRINT SELECTED JOB
S6506
PREVIEW SELECTED JOB
S6507
DELETE SELECTED JOB
S6508
SEND SELECTED JOB
S6509
CHANGE SELECTED JOB SCHEDULE
S6510
MAIN MENU

FIG. 66



0047056-4016498

FIG. 67

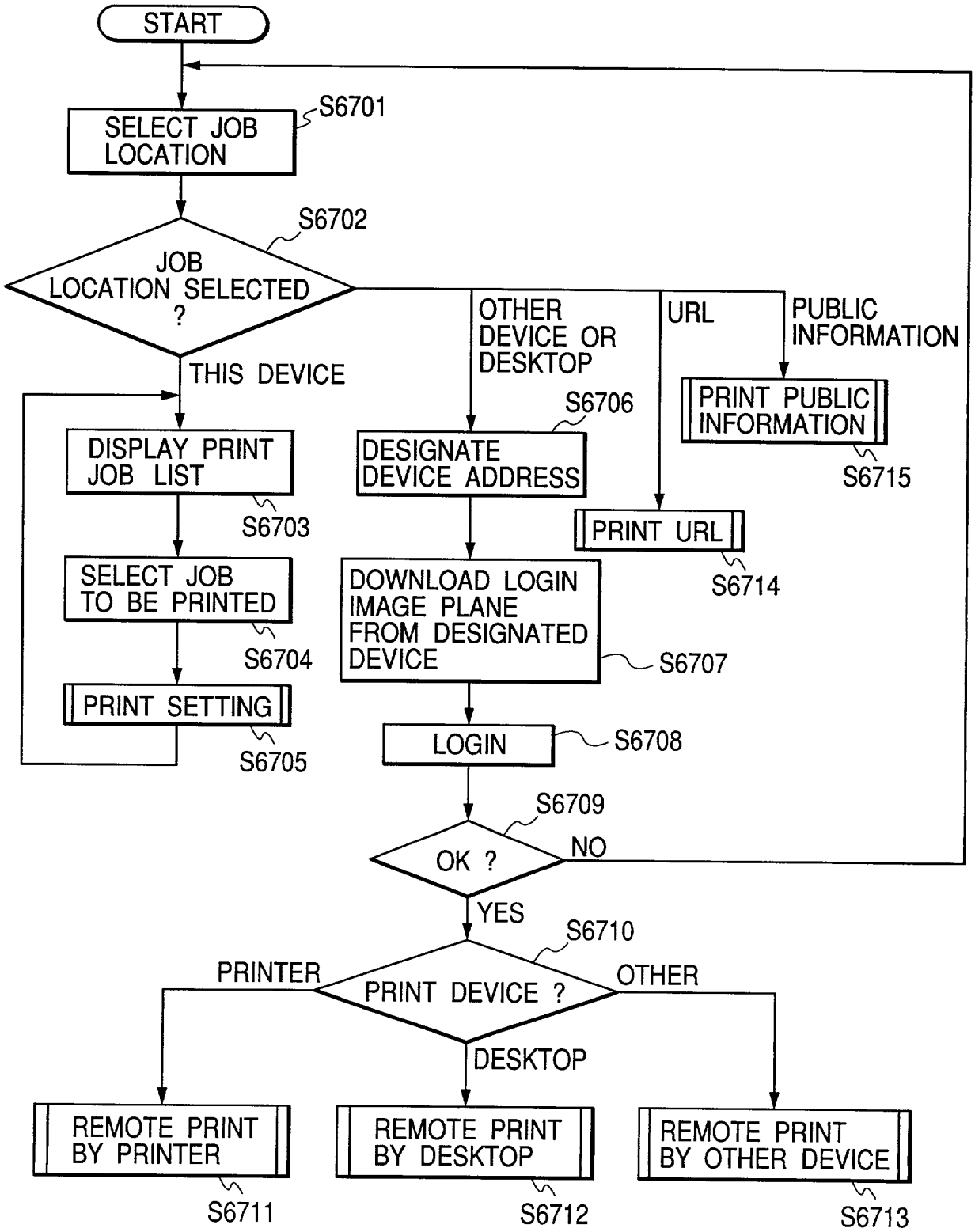

START
SELECT JOB LOCATION
S6701
JOB LOCATION SELECTED ?
S6702
THIS DEVICE
OTHER DEVICE OR DESKTOP
URL
PUBLIC INFORMATION
DISPLAY PRINT JOB LIST
S6703
SELECT JOB TO BE PRINTED
S6704
PRINT SETTING
S6705
DESIGNATE DEVICE ADDRESS
S6706
PRINT URL
S6714
PRINT PUBLIC INFORMATION
S6715
DOWNLOAD LOGIN IMAGE PLANE FROM DESIGNATED DEVICE
S6707
LOGIN
S6708
OK ?
S6709
NO
YES
PRINT DEVICE ?
S6710
PRINTER
OTHER
DESKTOP
REMOTE PRINT BY PRINTER
S6711
REMOTE PRINT BY DESKTOP
S6712
REMOTE PRINT BY OTHER DEVICE
S6713

FIG. 68

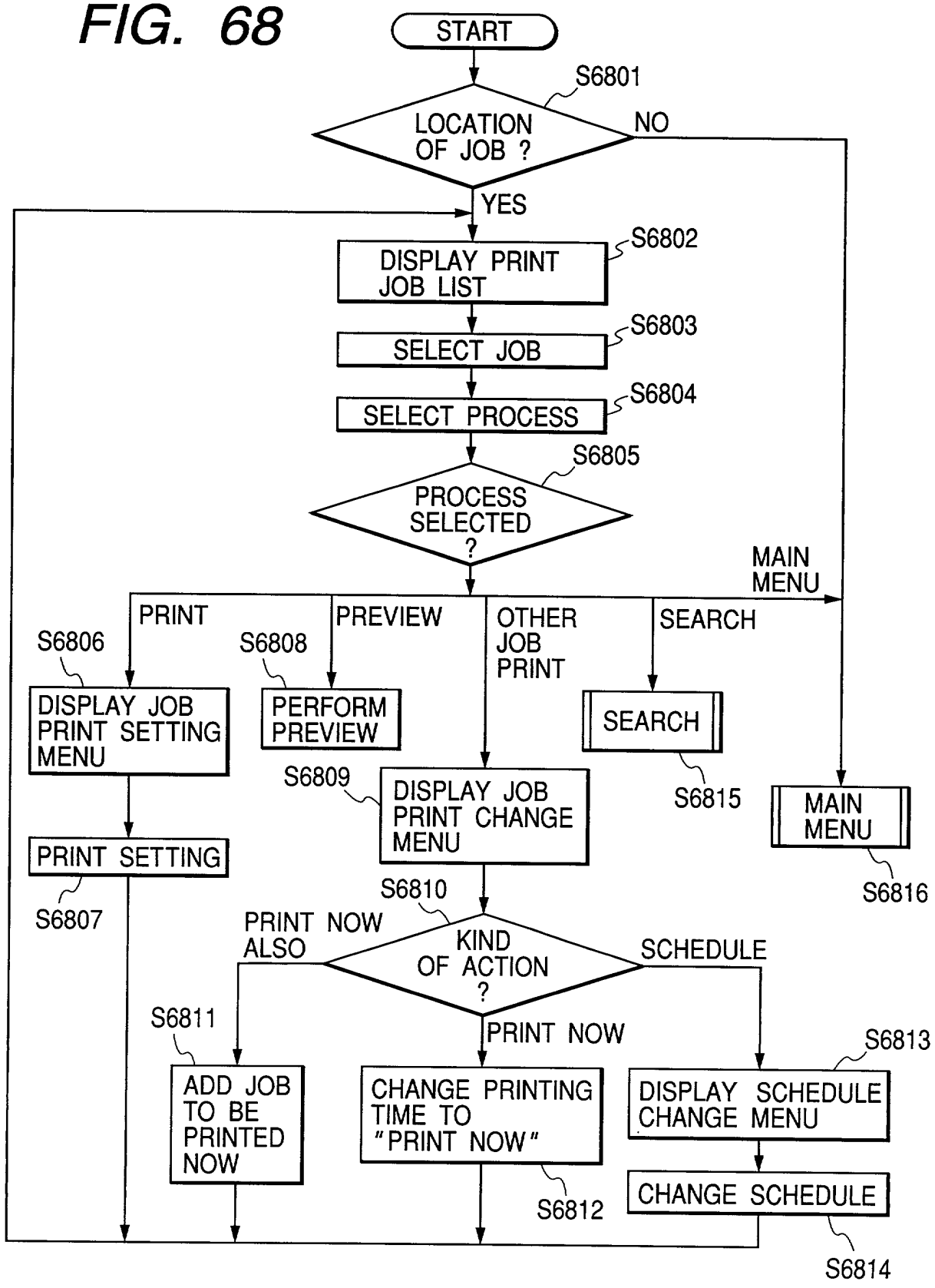
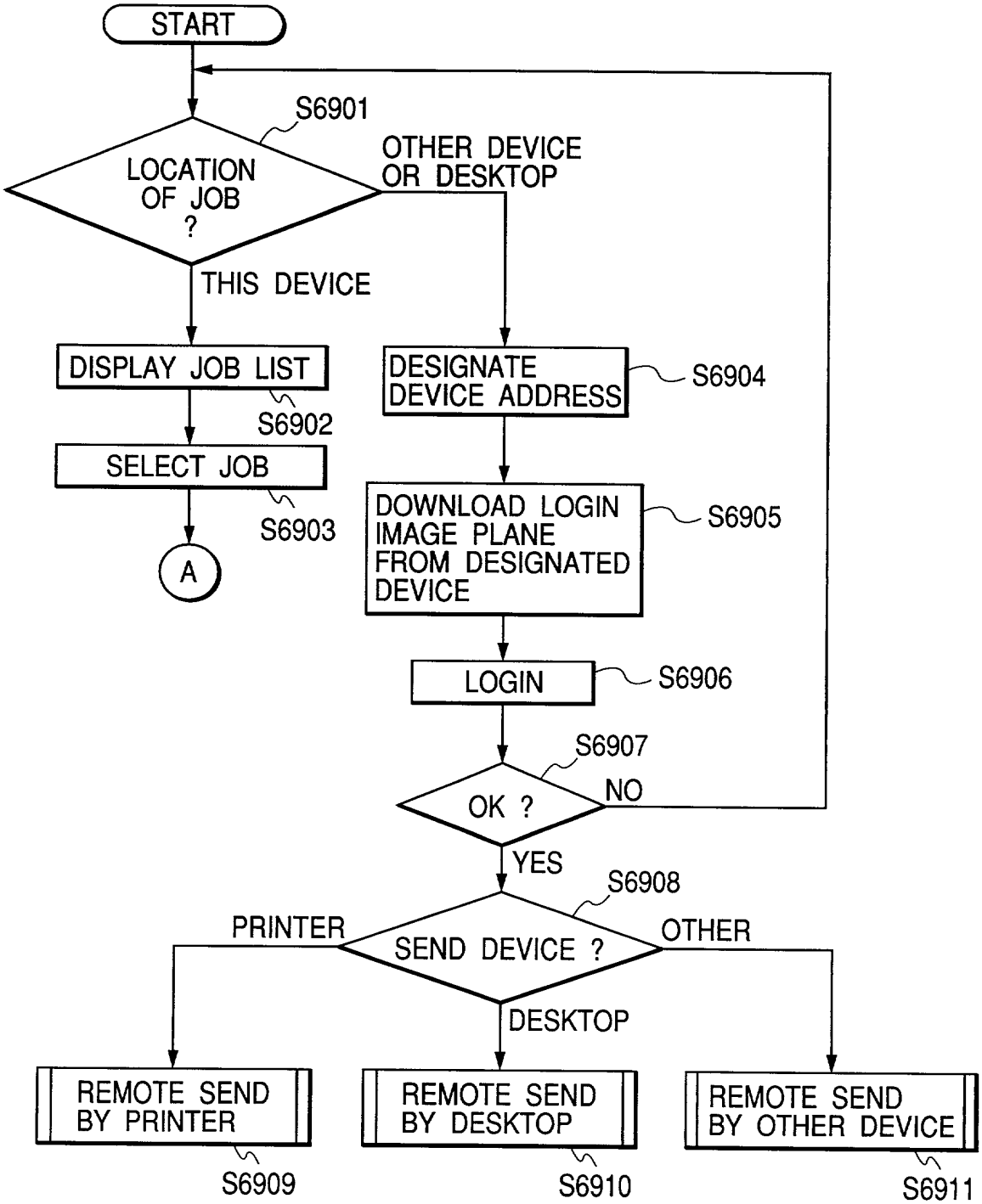

START
S6801
LOCATION OF JOB ?
NO
YES
S6802
DISPLAY PRINT JOB LIST
S6803
SELECT JOB
S6804
SELECT PROCESS
S6805
PROCESS SELECTED ?
MAIN MENU
PRINT
PREVIEW
OTHER JOB PRINT
SEARCH
S6806
S6808
DISPLAY JOB PRINT SETTING MENU
PERFORM PREVIEW
SEARCH
S6815
S6809
DISPLAY JOB PRINT CHANGE MENU
MAIN MENU
S6816
PRINT SETTING
S6807
S6810
PRINT NOW ALSO
KIND OF ACTION ?
SCHEDULE
S6811
PRINT NOW
S6813
ADD JOB TO BE PRINTED NOW
CHANGE PRINTING TIME TO "PRINT NOW"
DISPLAY SCHEDULE CHANGE MENU
S6812
CHANGE SCHEDULE
S6814

FIG. 69


START
S6901
LOCATION OF JOB ?
OTHER DEVICE OR DESKTOP
THIS DEVICE
DISPLAY JOB LIST
S6902
SELECT JOB
S6903
A
DESIGNATE DEVICE ADDRESS
S6904
DOWNLOAD LOGIN IMAGE PLANE FROM DESIGNATED DEVICE
S6905
LOGIN
S6906
S6907
OK ?
NO
YES
S6908
PRINTER
SEND DEVICE ?
OTHER
DESKTOP
REMOTE SEND BY PRINTER
S6909
REMOTE SEND BY DESKTOP
S6910
REMOTE SEND BY OTHER DEVICE
S6911

6644707 - 9502760

FIG. 70

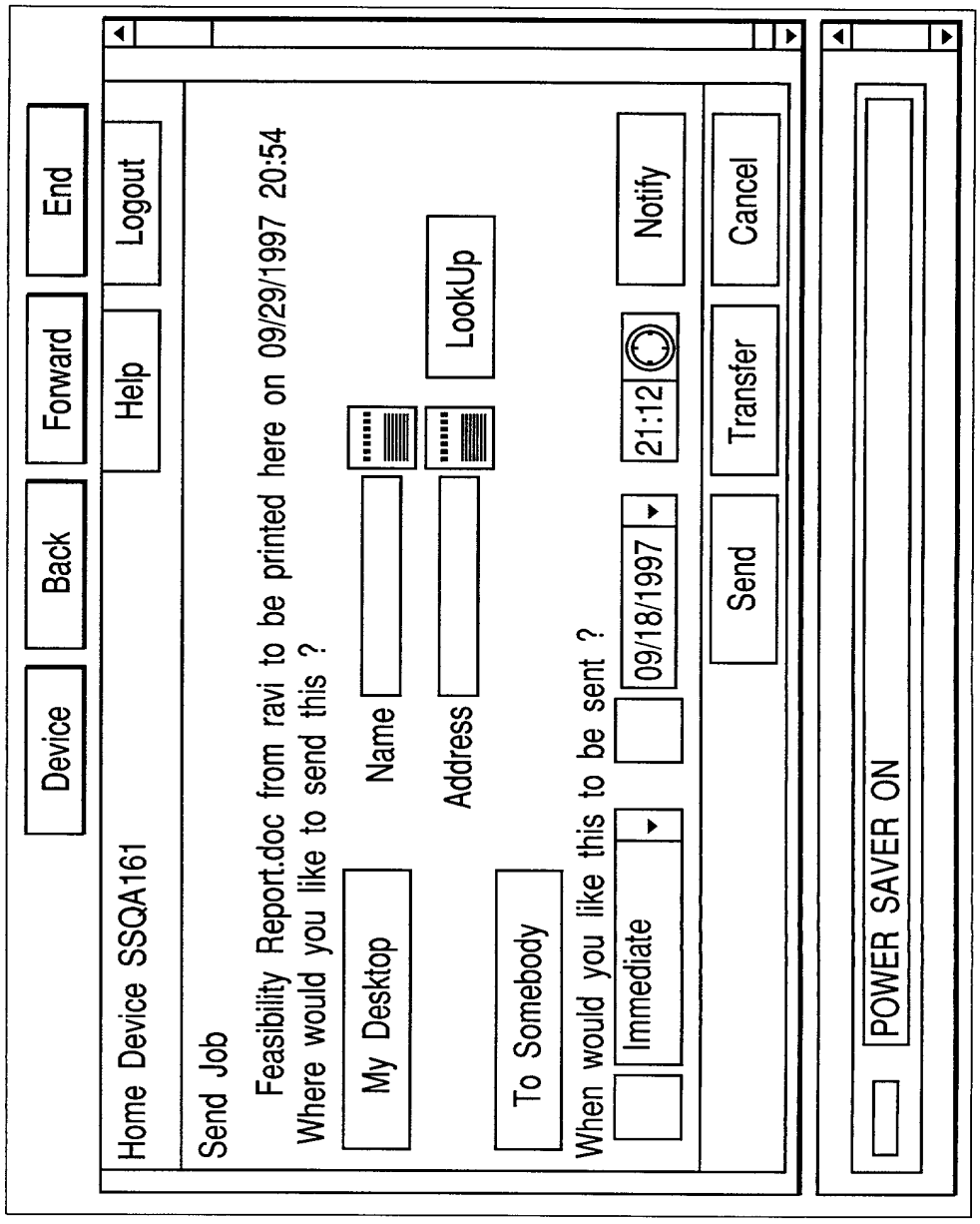


FIG. 71

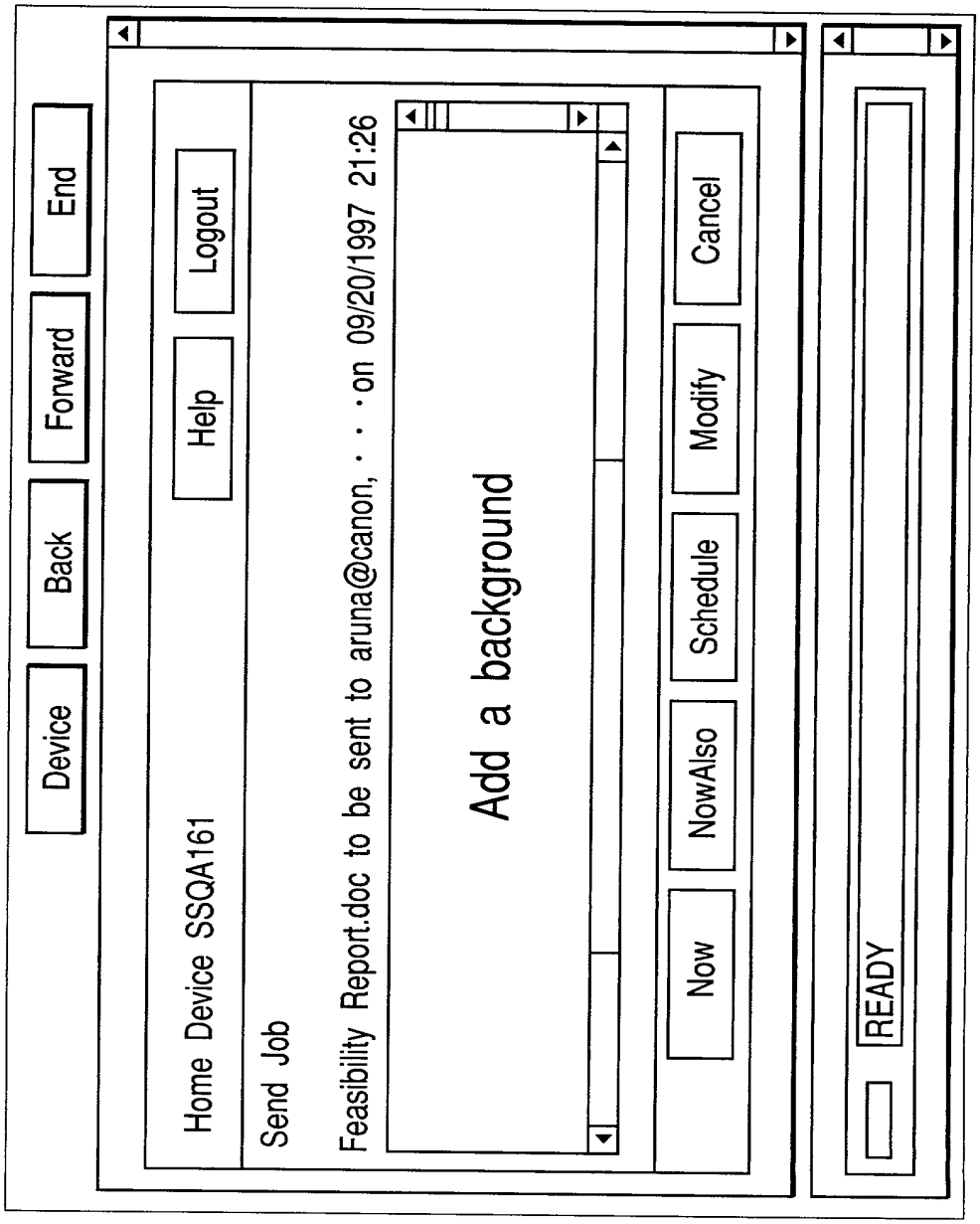

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Send Job
Feasibility Report.doc to be sent to aruna@canon, · · · on 09/20/1997 21:26
Add a background
Now
NowAlso
Schedule
Modify
Cancel
READY

FIG. 72

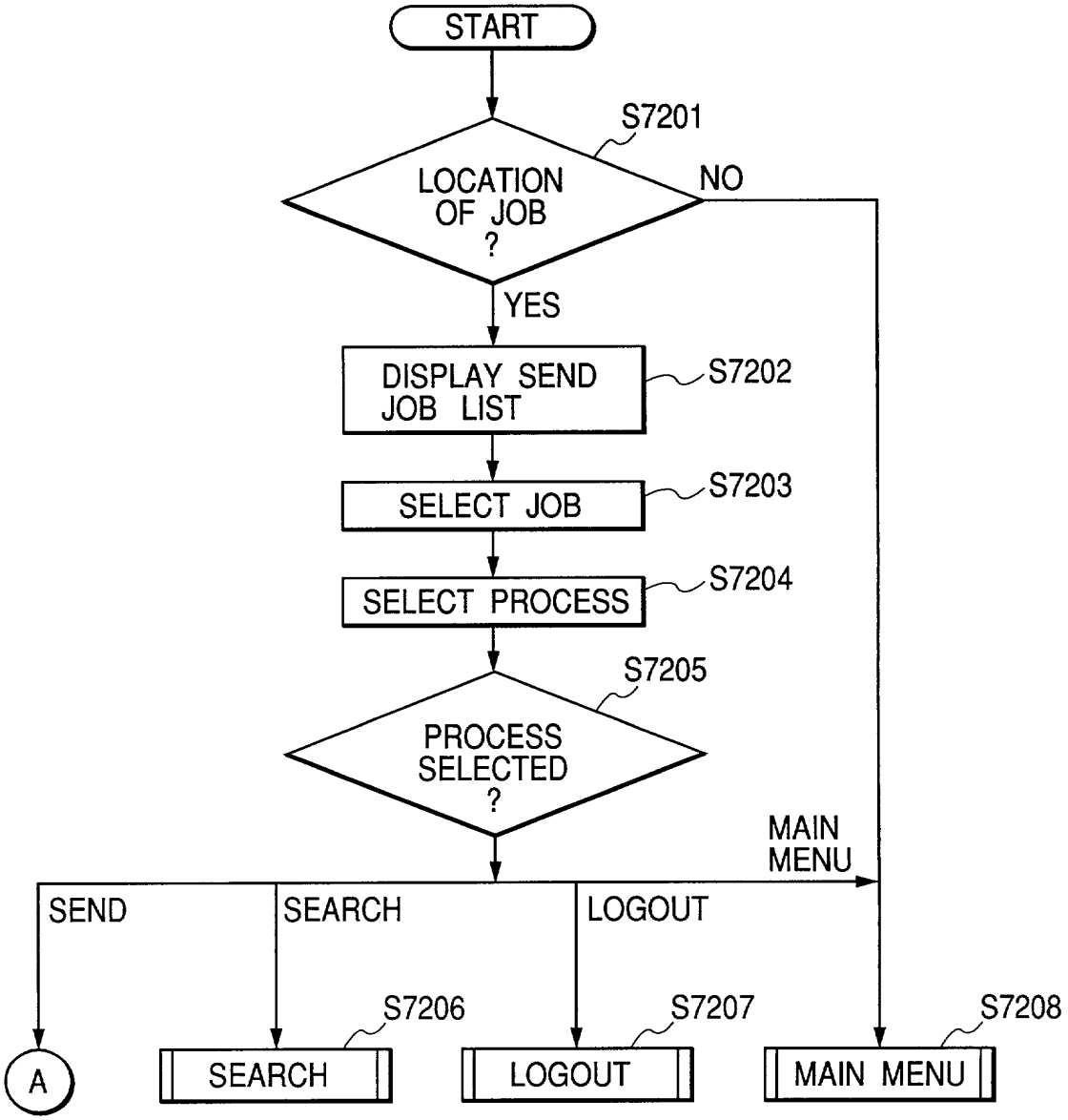

START
S7201
LOCATION OF JOB ?
NO
YES
DISPLAY SEND JOB LIST
S7202
SELECT JOB
S7203
SELECT PROCESS
S7204
S7205
PROCESS SELECTED ?
MAIN MENU
SEND
SEARCH
LOGOUT
S7206
S7207
S7208
A
SEARCH
LOGOUT
MAIN MENU

FIG. 73

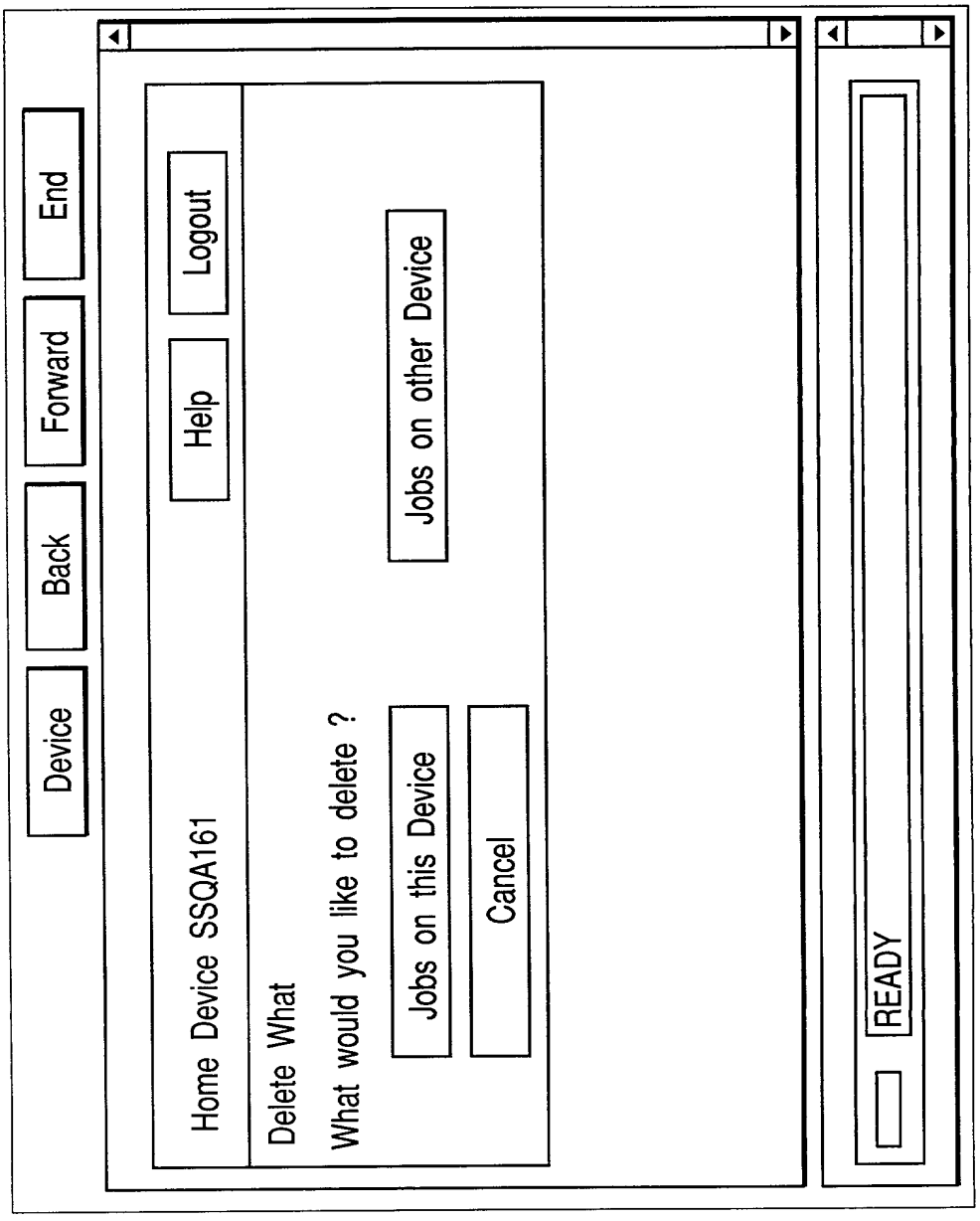

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Delete What
What would you like to delete ?
Jobs on other Device
Jobs on this Device
Cancel
READY

FIG. 74

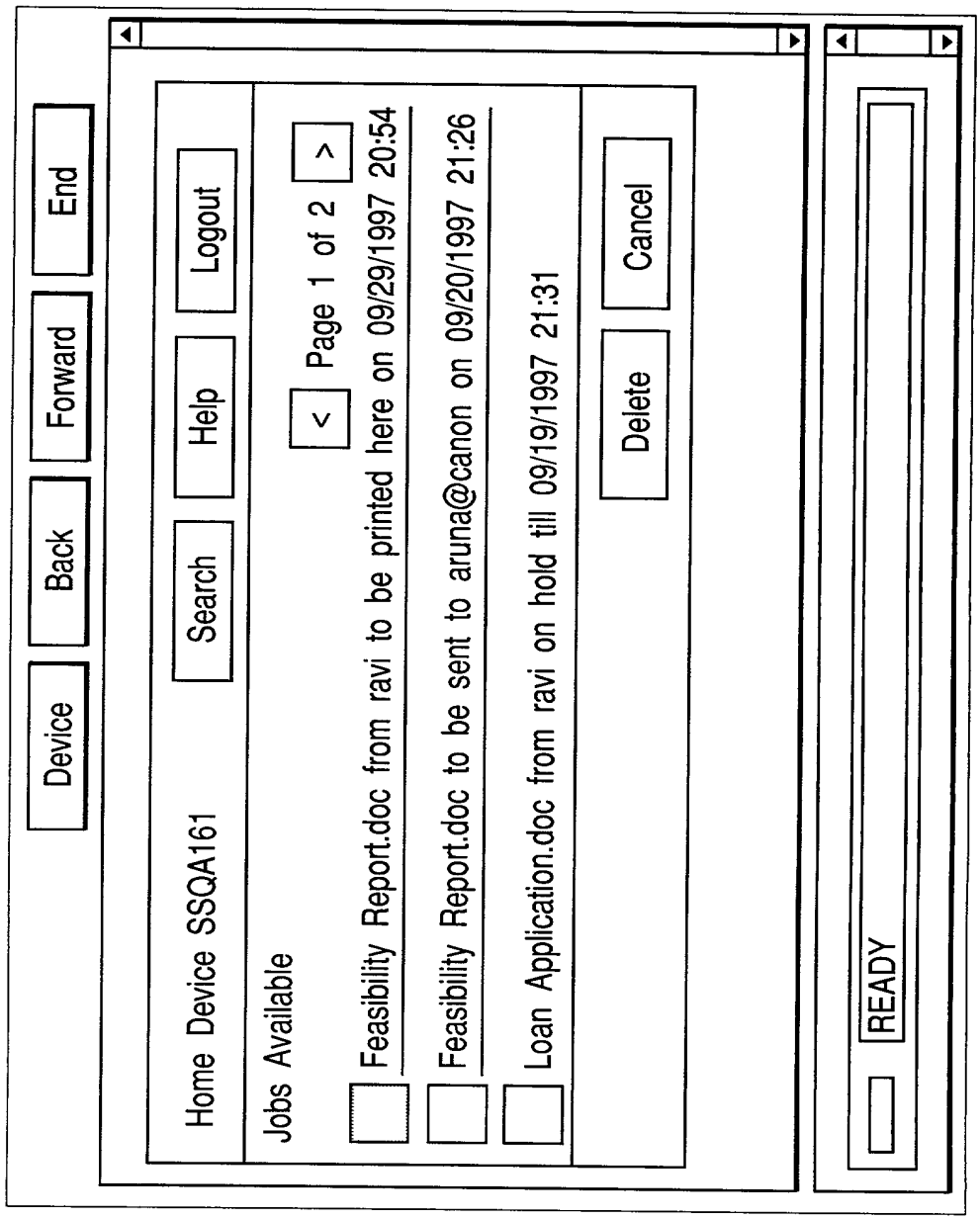

Device
Back
Forward
End
Home Device SSQA161
Search
Help
Logout
Jobs Available
< Page 1 of 2 >
Feasibility Report.doc from ravi to be printed here on 09/29/1997 20:54
Feasibility Report.doc to be sent to aruna@canon on 09/20/1997 21:26
Loan Application.doc from ravi on hold till 09/19/1997 21:31
Delete
Cancel
READY

FIG. 75

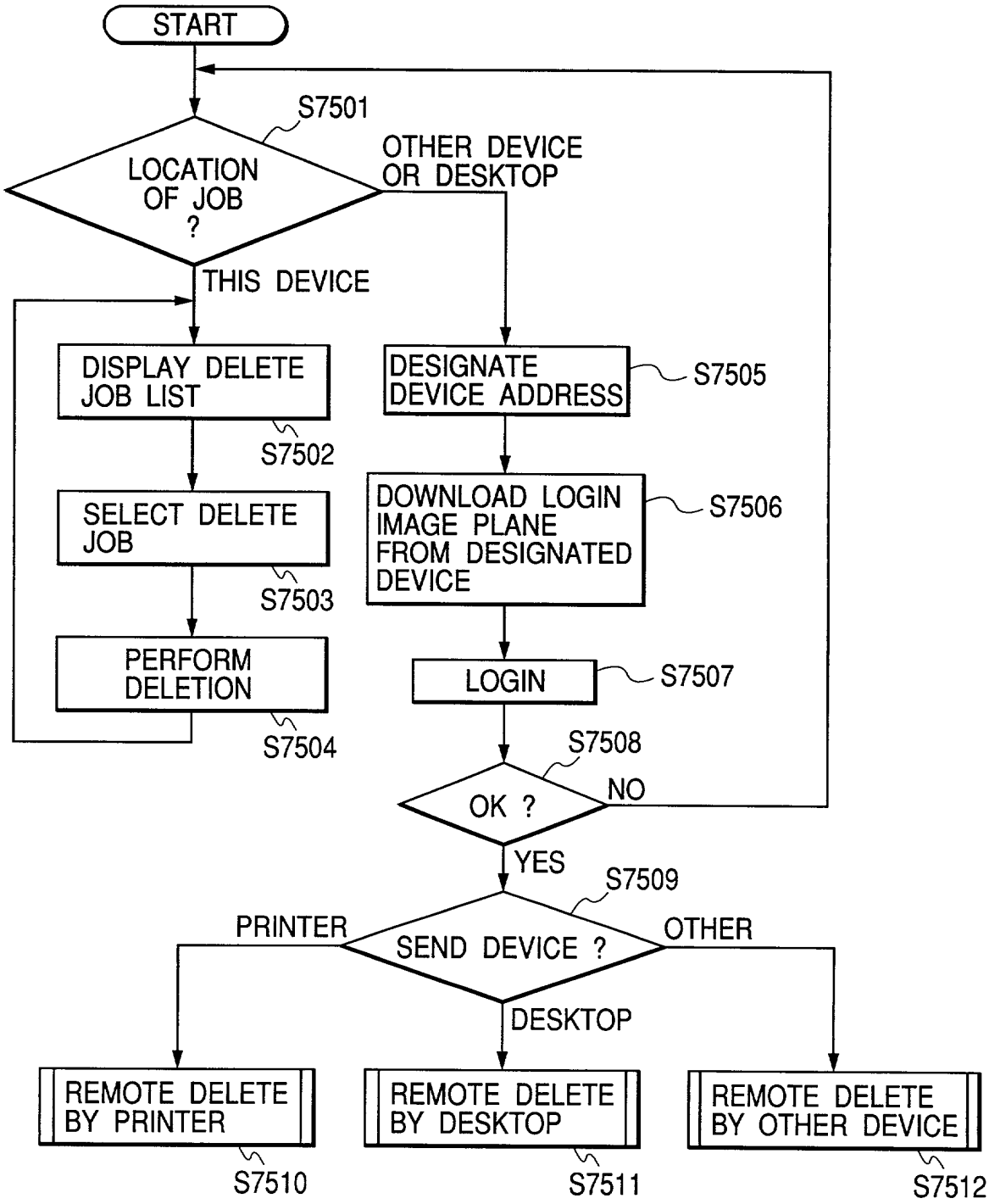

START
S7501
LOCATION OF JOB ?
OTHER DEVICE OR DESKTOP
THIS DEVICE
DISPLAY DELETE JOB LIST
S7502
SELECT DELETE JOB
S7503
PERFORM DELETION
S7504
DESIGNATE DEVICE ADDRESS
S7505
DOWNLOAD LOGIN IMAGE PLANE FROM DESIGNATED DEVICE
S7506
LOGIN
S7507
S7508
OK ?
NO
YES
S7509
SEND DEVICE ?
PRINTER
OTHER
DESKTOP
REMOTE DELETE BY PRINTER
S7510
REMOTE DELETE BY DESKTOP
S7511
REMOTE DELETE BY OTHER DEVICE
S7512

FIG. 76

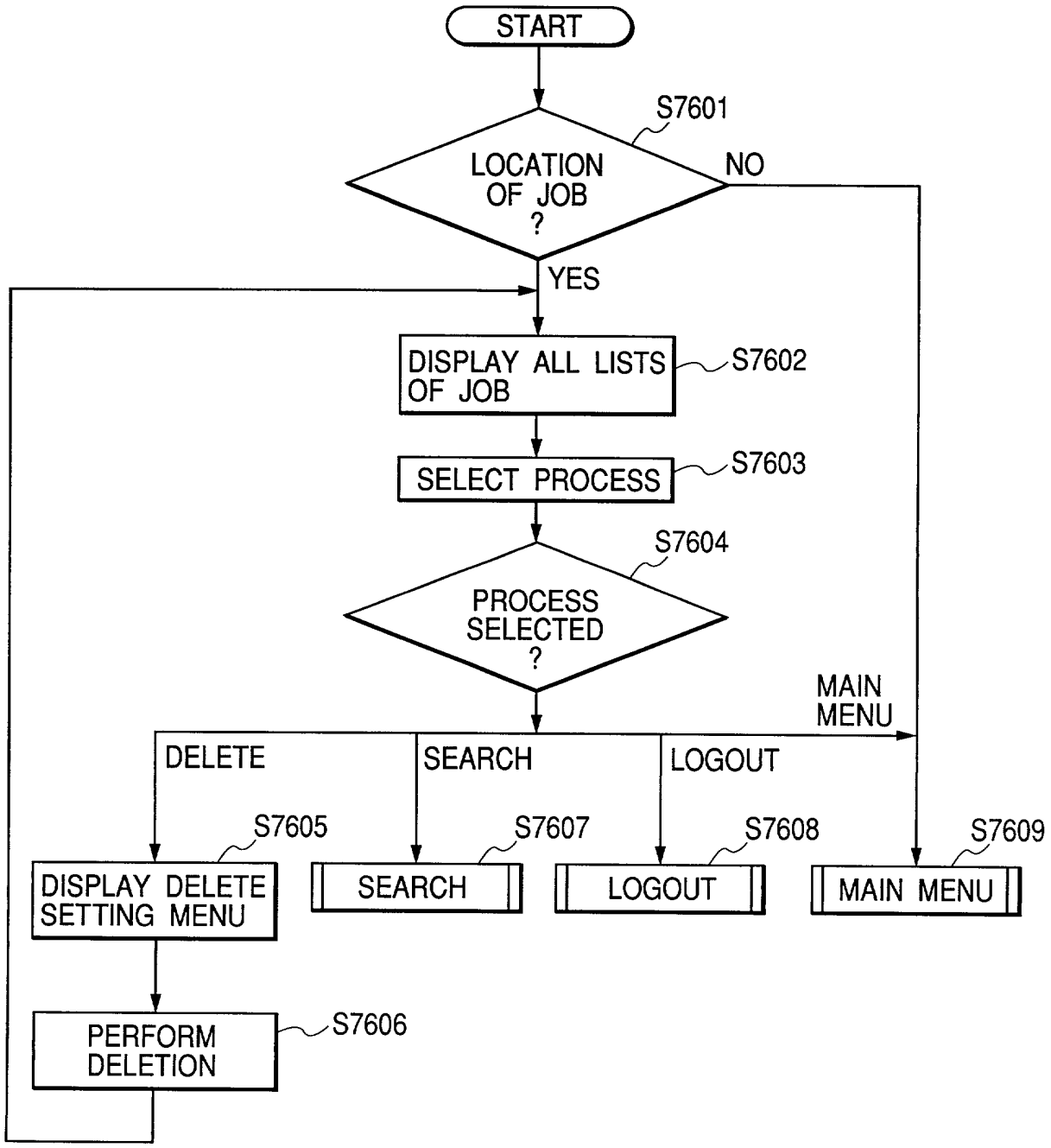

START
S7601
LOCATION OF JOB ?
NO
YES
DISPLAY ALL LISTS OF JOB
S7602
SELECT PROCESS
S7603
S7604
PROCESS SELECTED ?
MAIN MENU
DELETE
SEARCH
LOGOUT
S7605
S7607
S7608
S7609
DISPLAY DELETE SETTING MENU
SEARCH
LOGOUT
MAIN MENU
PERFORM DELETION
S7606

FIG. 77

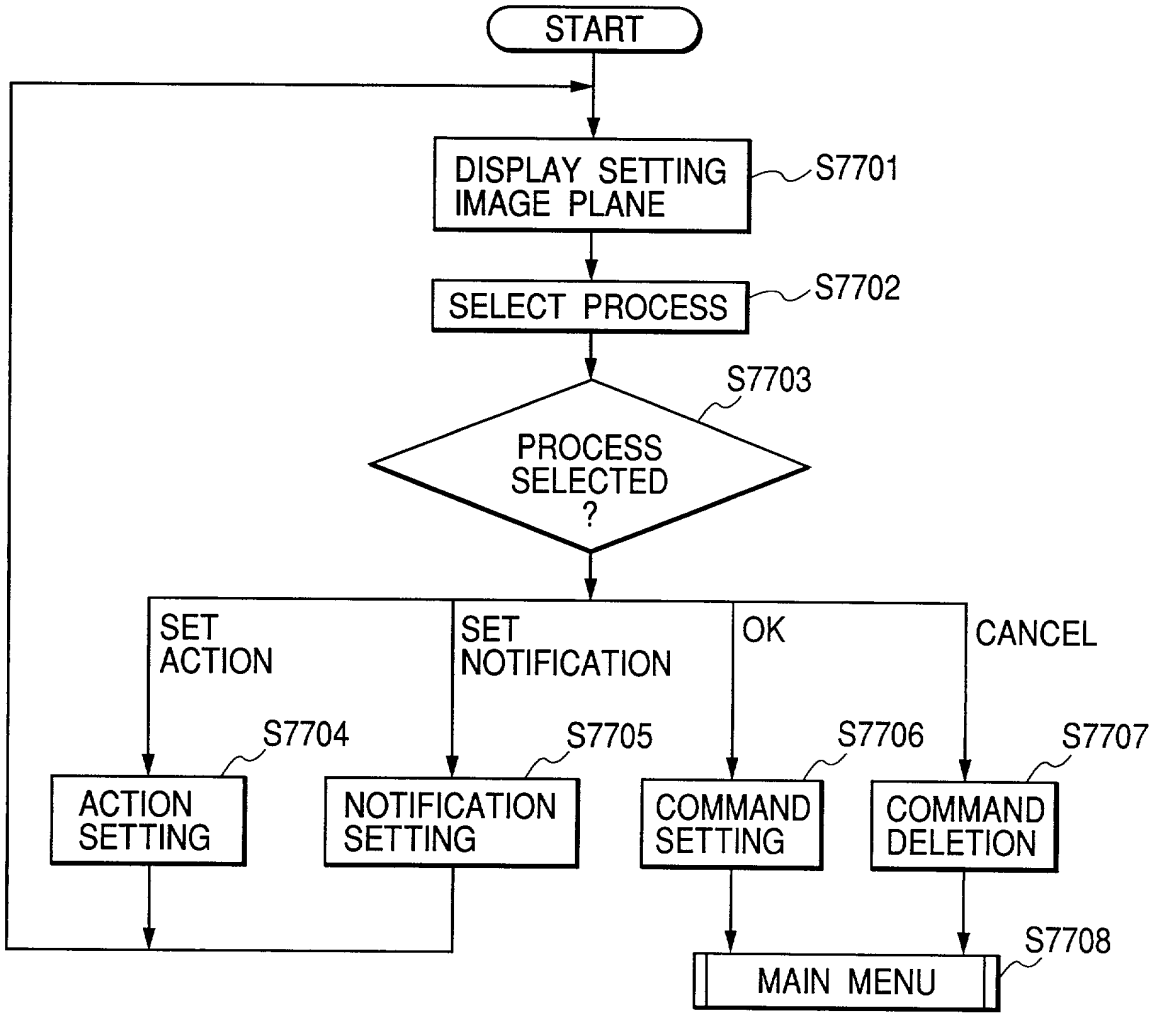

START
DISPLAY SETTING IMAGE PLANE
S7701
SELECT PROCESS
S7702
S7703
PROCESS SELECTED ?
SET ACTION
SET NOTIFICATION
OK
CANCEL
S7704
S7705
S7706
S7707
ACTION SETTING
NOTIFICATION SETTING
COMMAND SETTING
COMMAND DELETION
S7708
MAIN MENU

FIG. 78

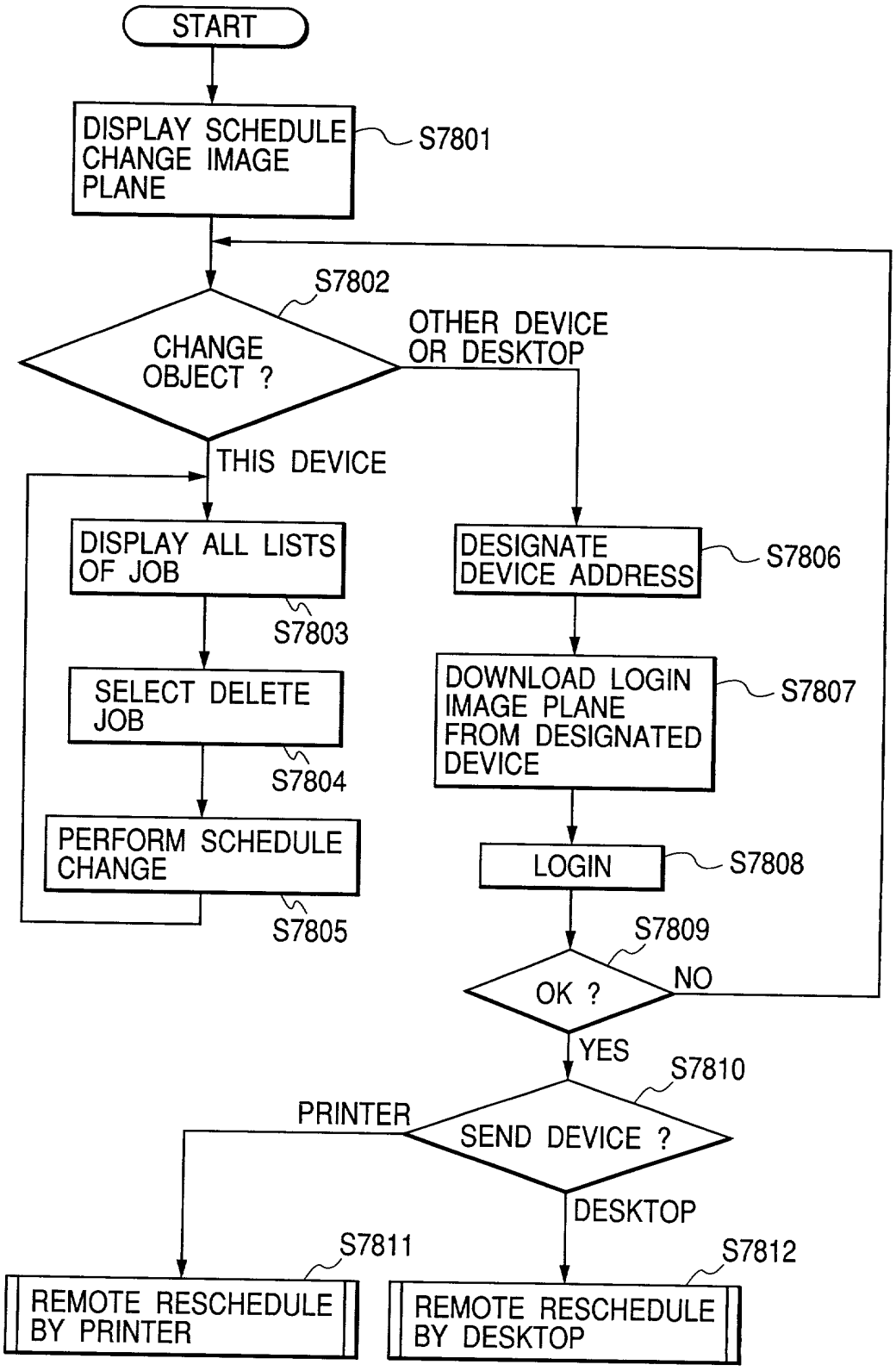

START
DISPLAY SCHEDULE CHANGE IMAGE PLANE
S7801
S7802
CHANGE OBJECT ?
OTHER DEVICE OR DESKTOP
THIS DEVICE
DISPLAY ALL LISTS OF JOB
S7803
SELECT DELETE JOB
S7804
PERFORM SCHEDULE CHANGE
S7805
DESIGNATE DEVICE ADDRESS
S7806
DOWNLOAD LOGIN IMAGE PLANE FROM DESIGNATED DEVICE
S7807
LOGIN
S7808
S7809
OK ?
NO
YES
S7810
PRINTER
SEND DEVICE ?
DESKTOP
S7811
REMOTE RESCHEDULE BY PRINTER
S7812
REMOTE RESCHEDULE BY DESKTOP

FIG. 79

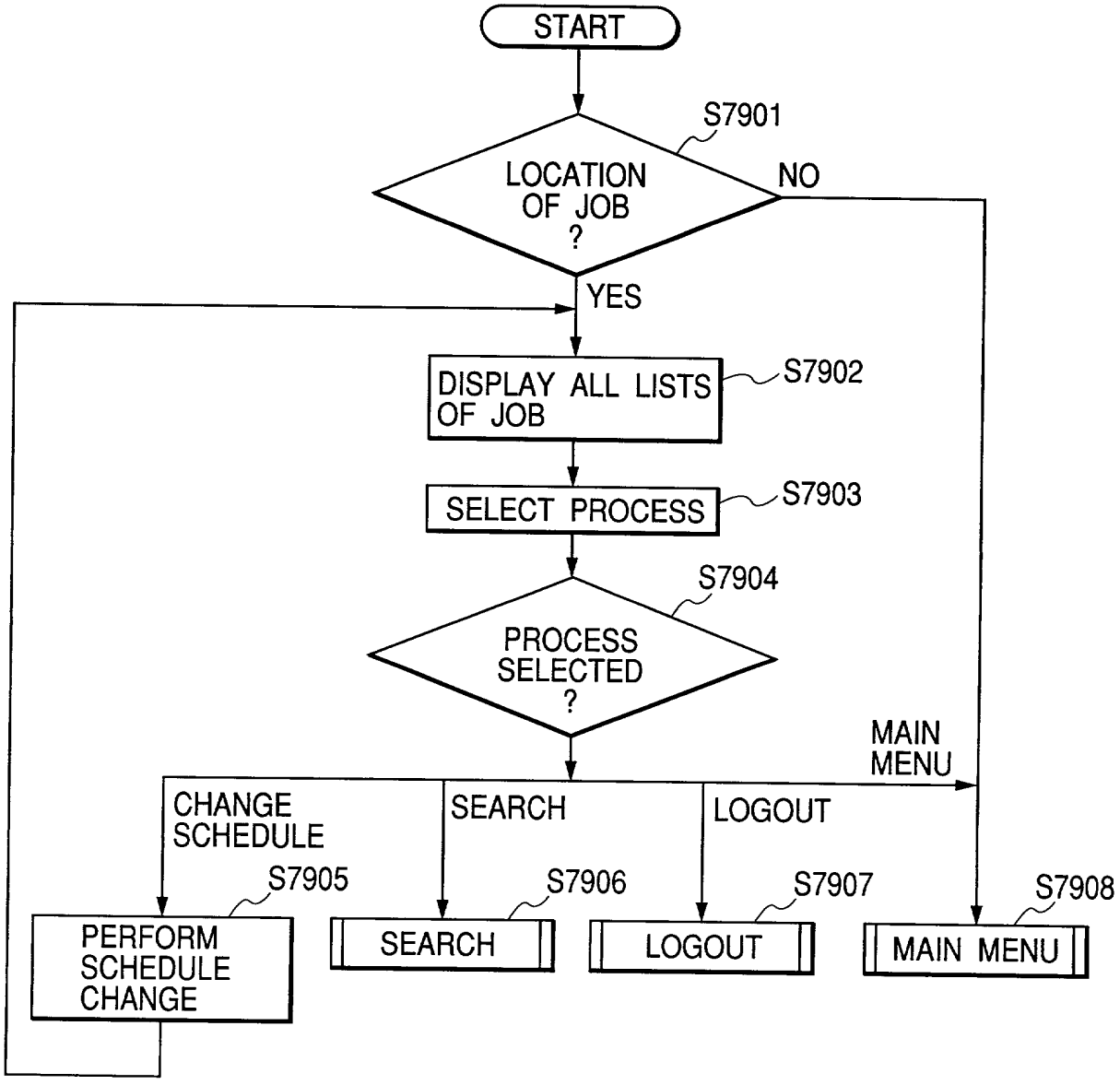

START
S7901
LOCATION OF JOB ?
NO
YES
DISPLAY ALL LISTS OF JOB
S7902
SELECT PROCESS
S7903
S7904
PROCESS SELECTED ?
MAIN MENU
CHANGE SCHEDULE
SEARCH
LOGOUT
S7905
S7906
S7907
S7908
PERFORM SCHEDULE CHANGE
SEARCH
LOGOUT
MAIN MENU

FIG. 80

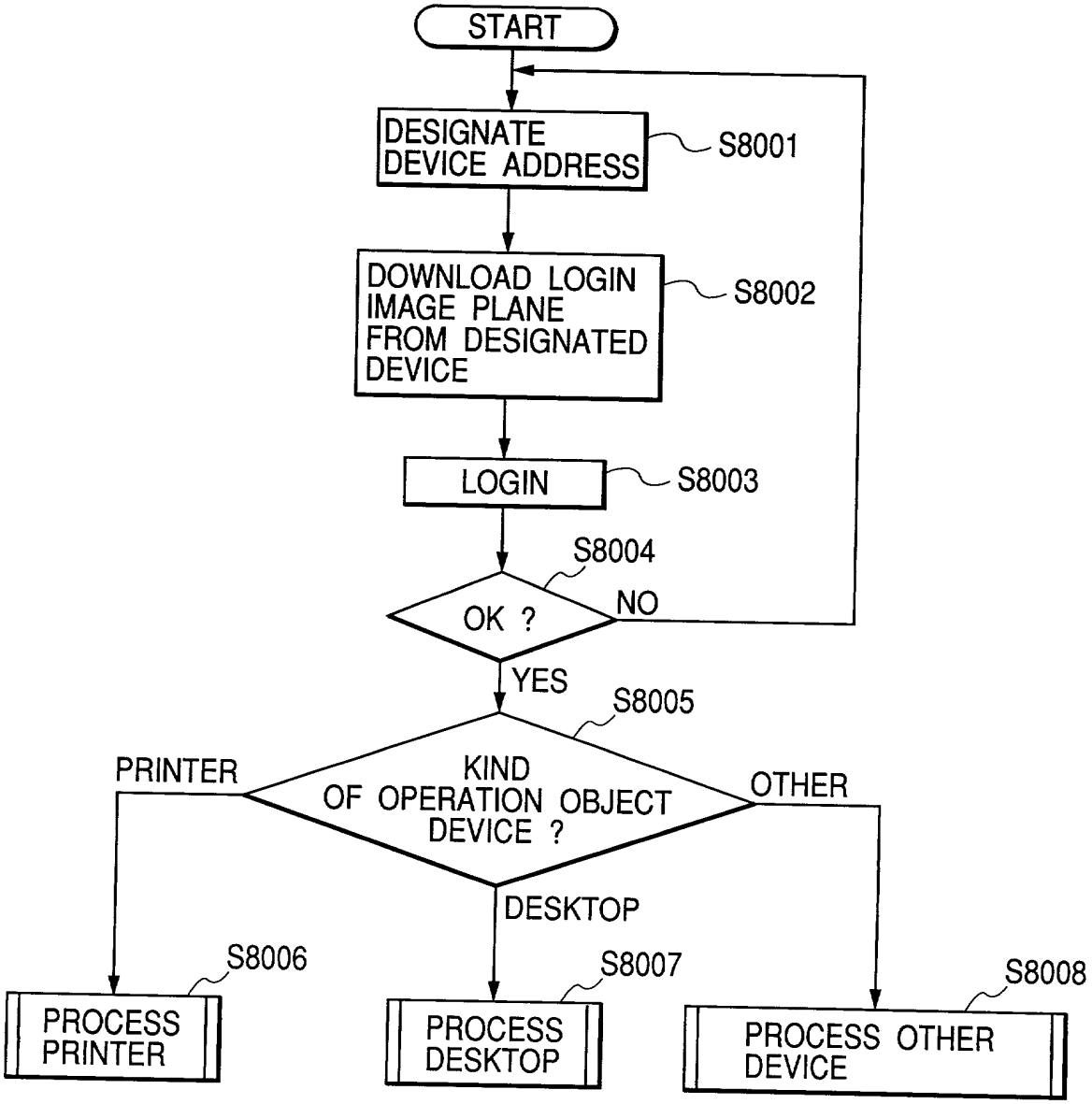

START
DESIGNATE DEVICE ADDRESS
S8001
DOWNLOAD LOGIN IMAGE PLANE FROM DESIGNATED DEVICE
S8002
LOGIN
S8003
S8004
OK ?
NO
YES
S8005
KIND OF OPERATION OBJECT DEVICE ?
PRINTER
DESKTOP
OTHER
S8006
PROCESS PRINTER
S8007
PROCESS DESKTOP
S8008
PROCESS OTHER DEVICE

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FIG. 81

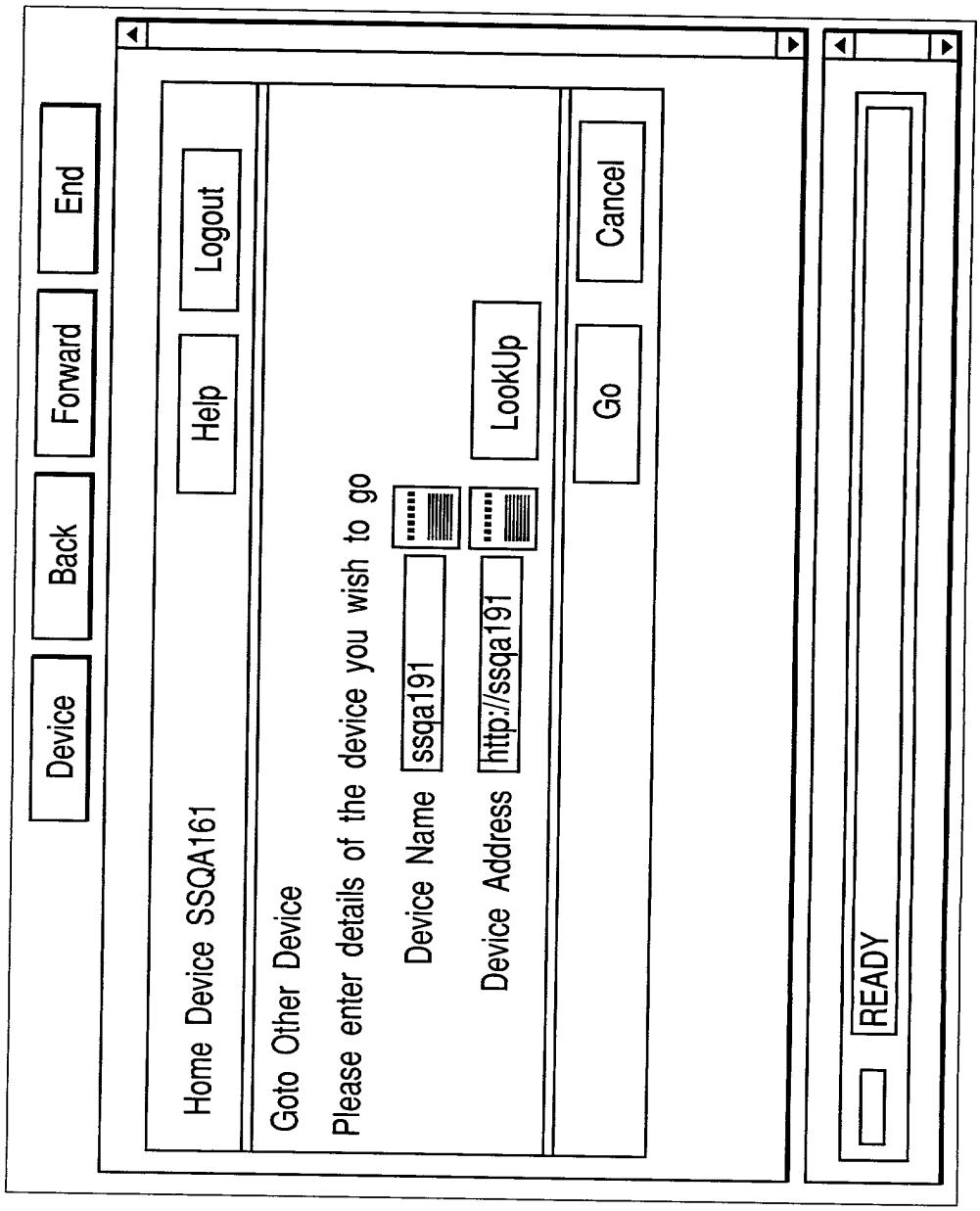

FIG. 82

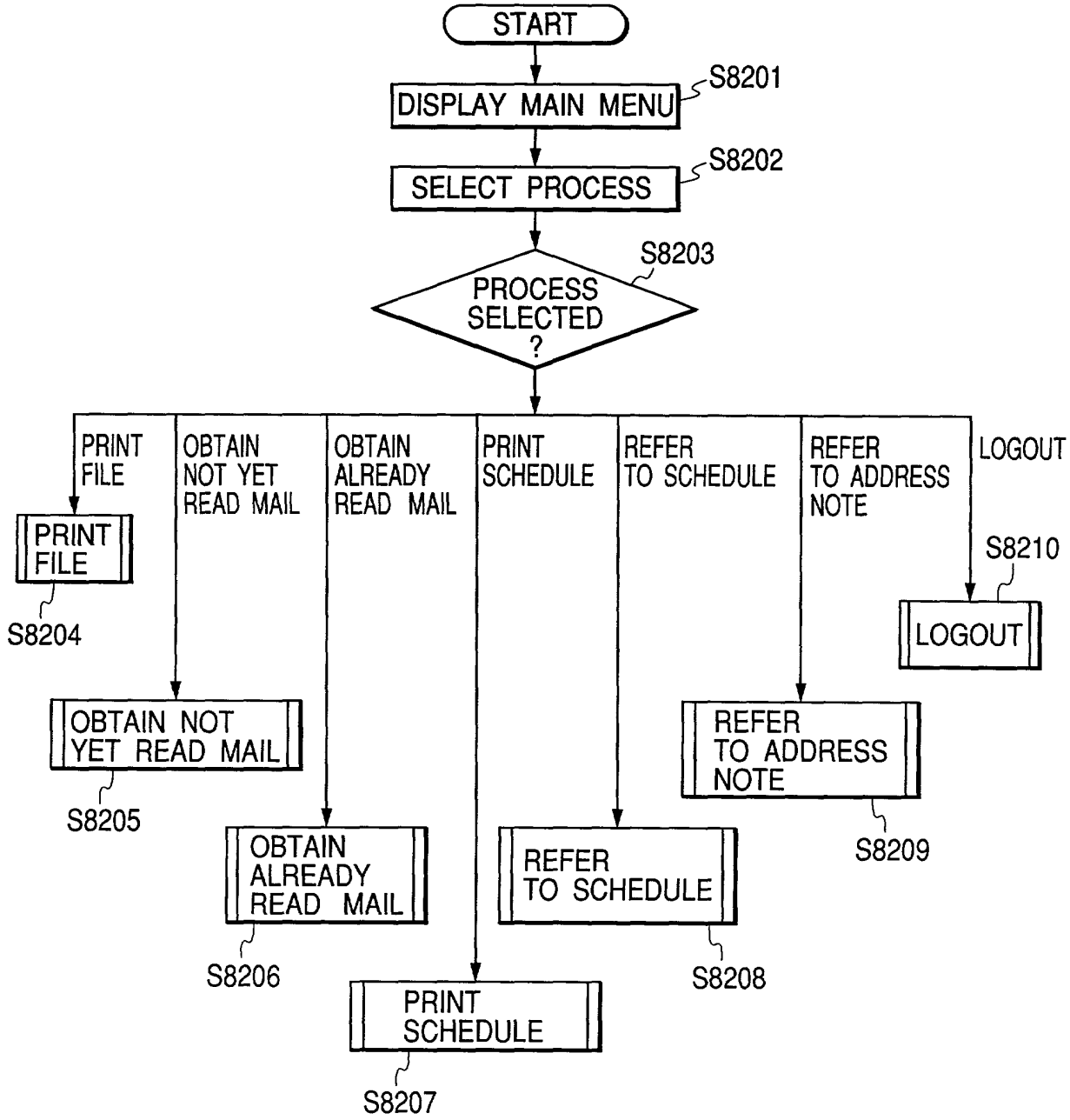
START
DISPLAY MAIN MENU
S8201
SELECT PROCESS
S8202
PROCESS SELECTED ?
S8203
PRINT FILE
OBTAIN NOT YET READ MAIL
OBTAIN ALREADY READ MAIL
PRINT SCHEDULE
REFER TO SCHEDULE
REFER TO ADDRESS NOTE
LOGOUT
PRINT FILE
S8204
OBTAIN NOT YET READ MAIL
S8205
OBTAIN ALREADY READ MAIL
S8206
PRINT SCHEDULE
S8207
REFER TO SCHEDULE
S8208
REFER TO ADDRESS NOTE
S8209
S8210
LOGOUT

FIG. 83

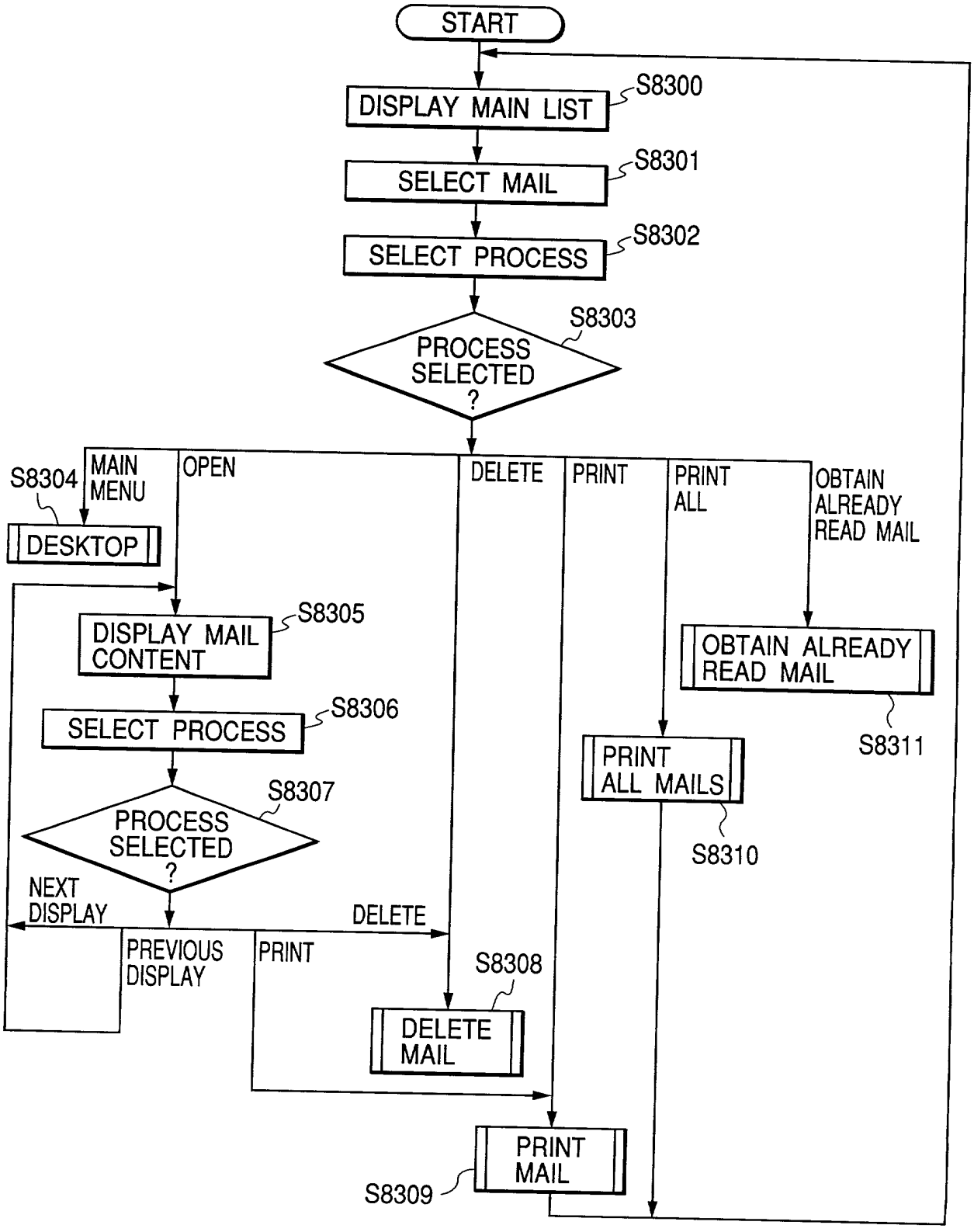
START
DISPLAY MAIN LIST
S8300
SELECT MAIL
S8301
SELECT PROCESS
S8302
PROCESS SELECTED ?
S8303
MAIN MENU
OPEN
DELETE
PRINT
PRINT ALL
OBTAIN ALREADY READ MAIL
S8304
DESKTOP
DISPLAY MAIL CONTENT
S8305
SELECT PROCESS
S8306
PROCESS SELECTED ?
S8307
NEXT DISPLAY
PREVIOUS DISPLAY
DELETE
PRINT
DELETE MAIL
S8308
PRINT ALL MAILS
S8310
OBTAIN ALREADY READ MAIL
S8311
PRINT MAIL
S8309

FIG. 84

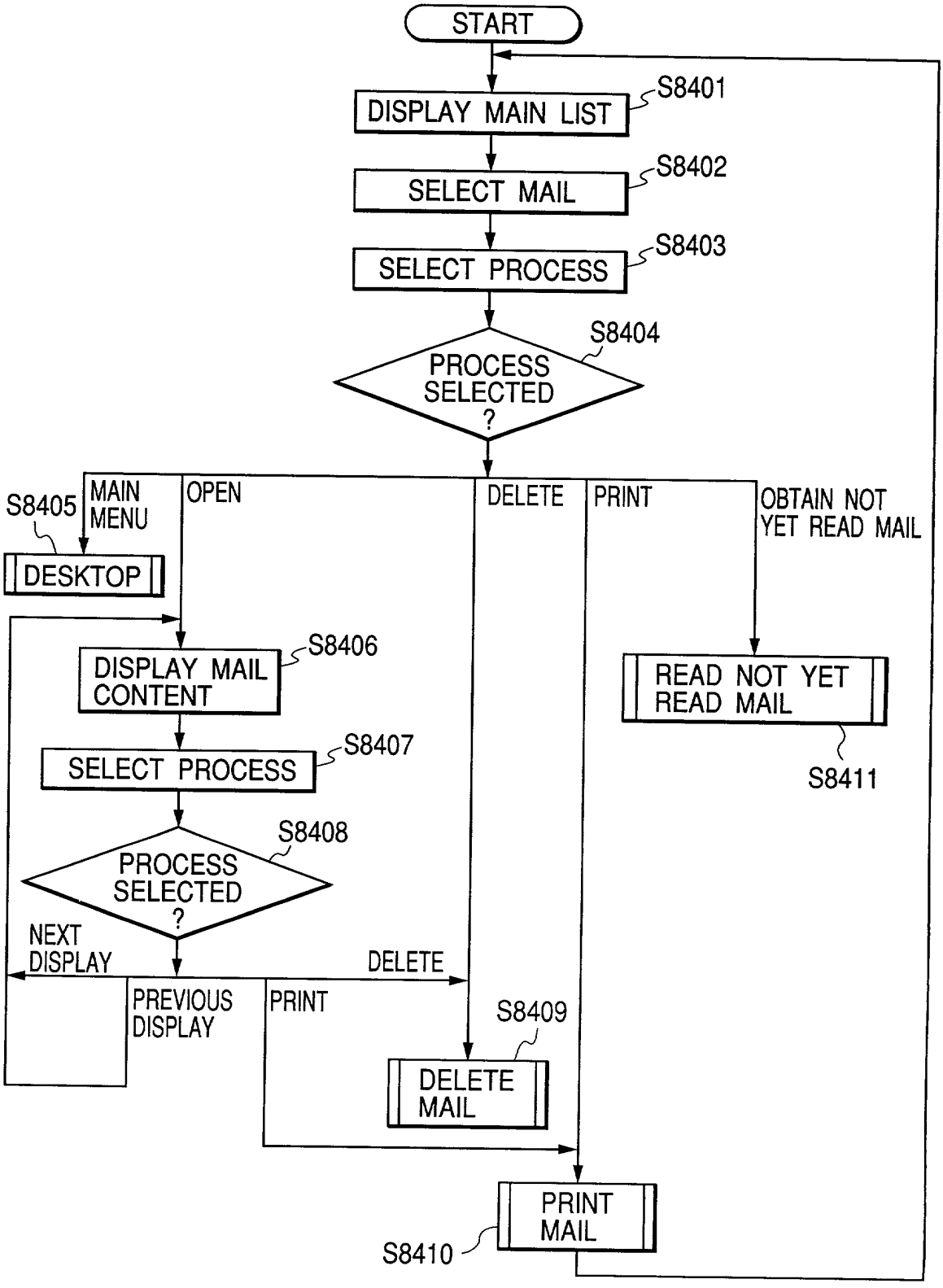
START
DISPLAY MAIN LIST
S8401
SELECT MAIL
S8402
SELECT PROCESS
S8403
PROCESS SELECTED ?
S8404
S8405
MAIN MENU
OPEN
DELETE
PRINT
OBTAIN NOT YET READ MAIL
DESKTOP
DISPLAY MAIL CONTENT
S8406
READ NOT YET READ MAIL
S8411
SELECT PROCESS
S8407
PROCESS SELECTED ?
S8408
NEXT DISPLAY
DELETE
PREVIOUS DISPLAY
PRINT
S8409
DELETE MAIL
PRINT MAIL
S8410

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FIG. 85

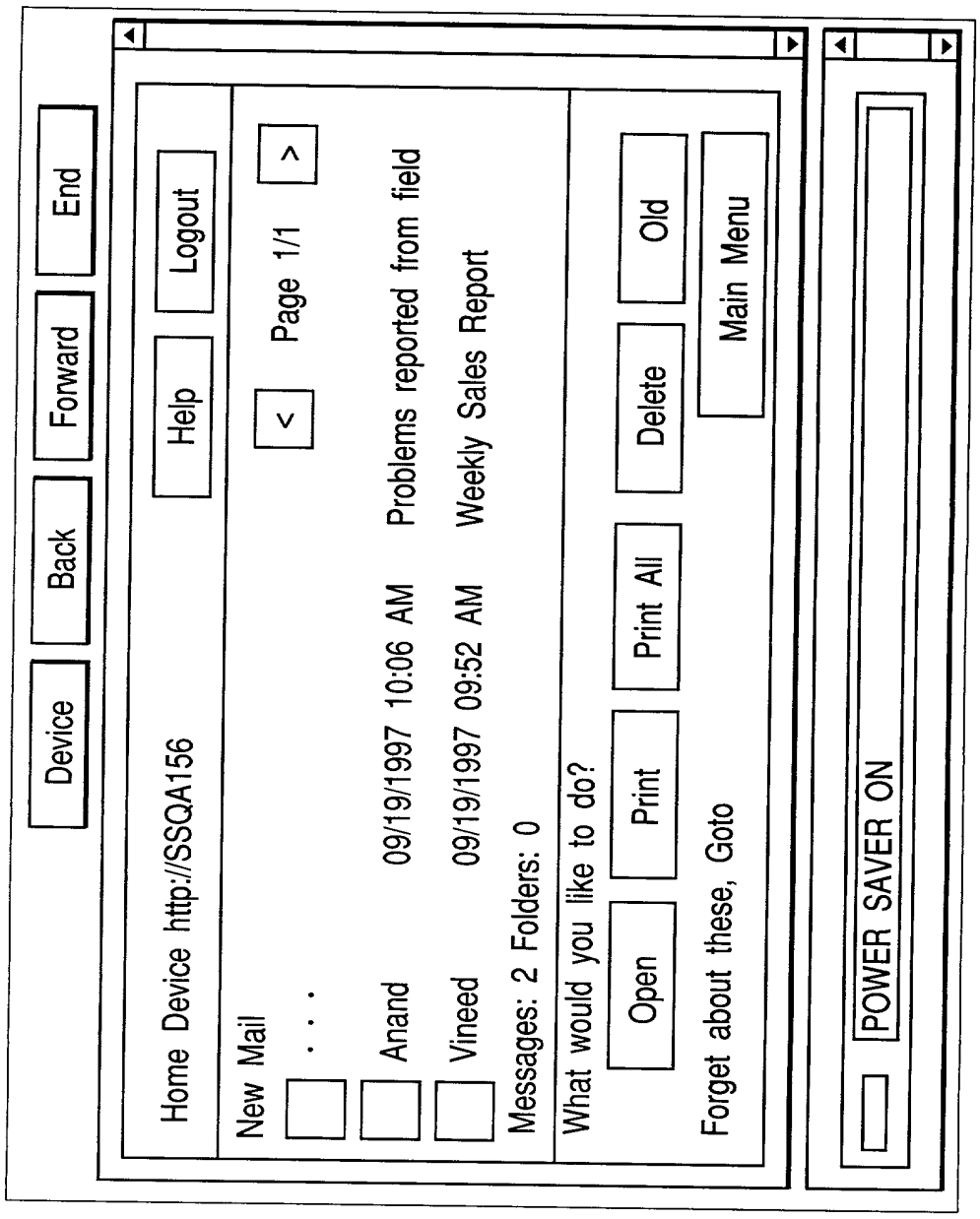

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FIG. 86

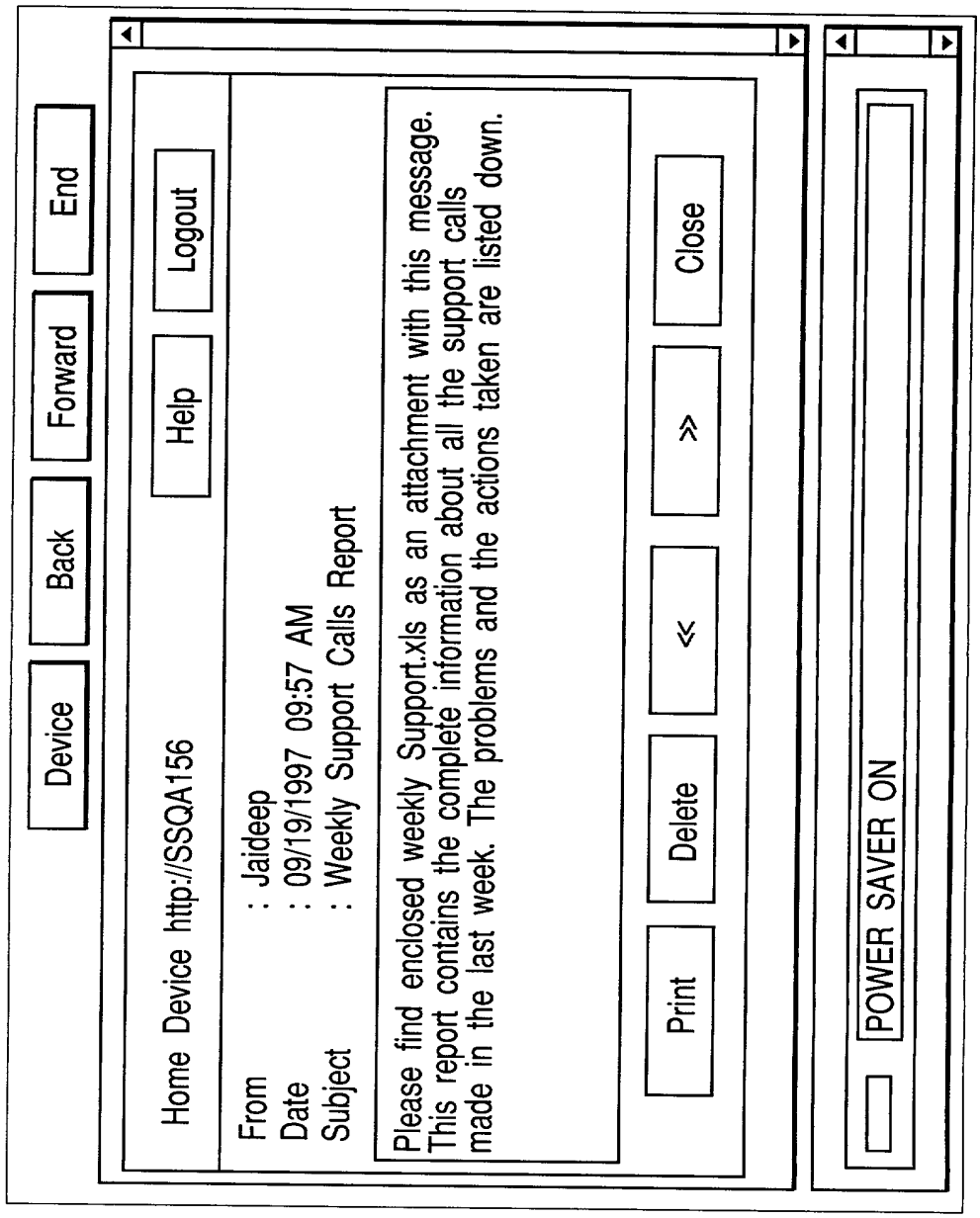

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FIG. 87

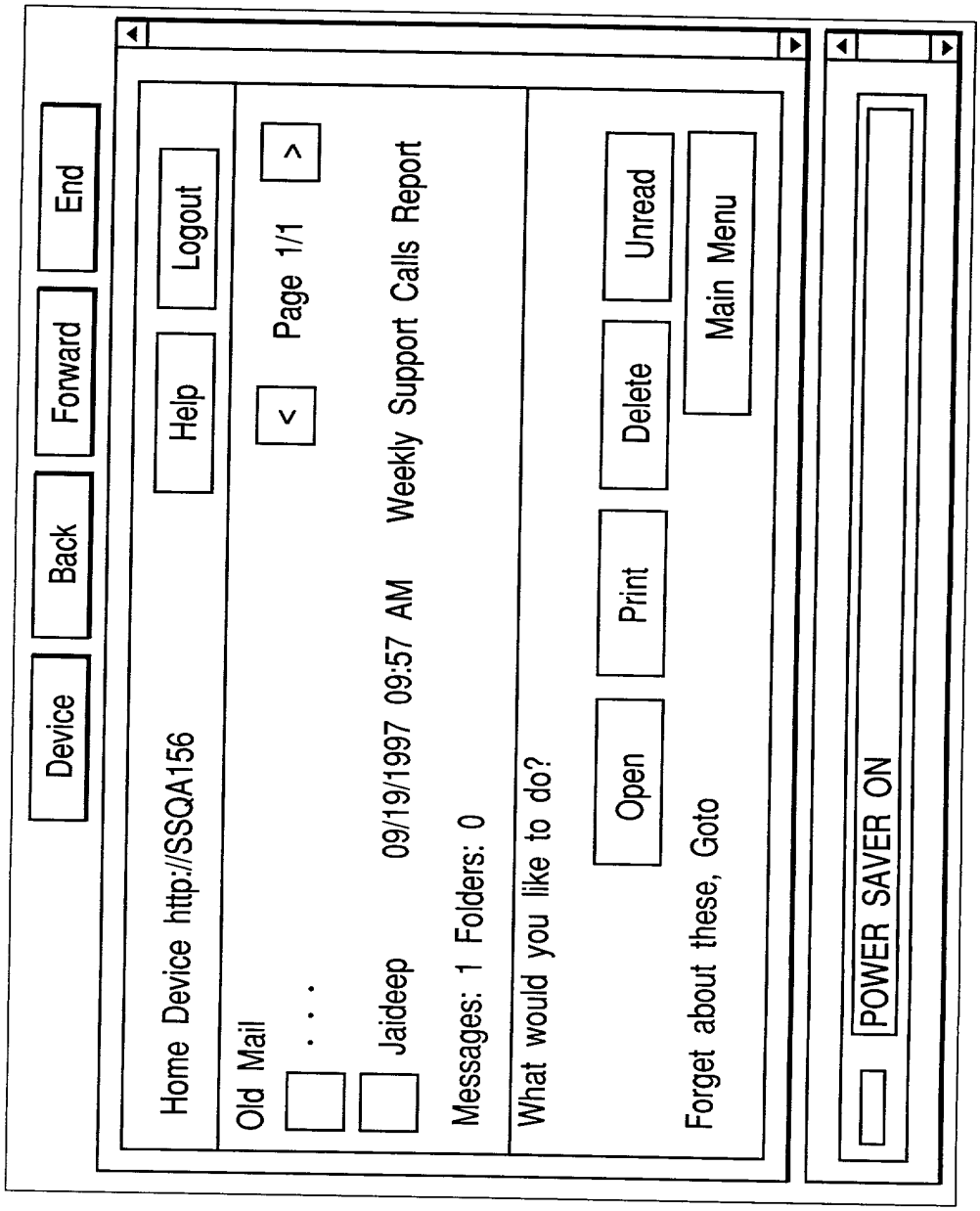

FIG. 88

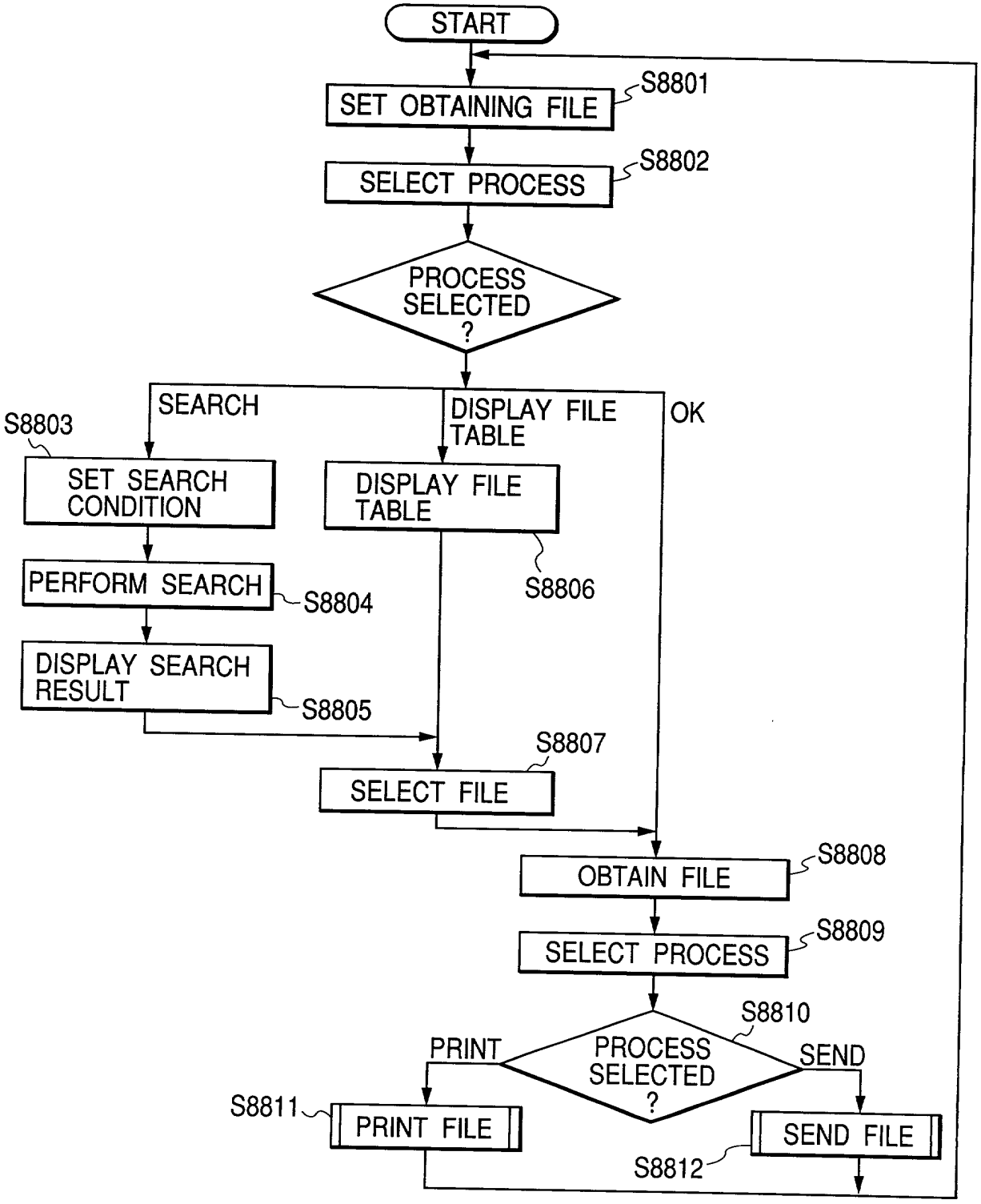
START
SET OBTAINING FILE
S8801
SELECT PROCESS
S8802
PROCESS SELECTED ?
SEARCH
DISPLAY FILE TABLE
OK
S8803
SET SEARCH CONDITION
DISPLAY FILE TABLE
PERFORM SEARCH
S8804
S8806
DISPLAY SEARCH RESULT
S8805
S8807
SELECT FILE
OBTAIN FILE
S8808
SELECT PROCESS
S8809
S8810
PRINT
PROCESS SELECTED ?
SEND
S8811
PRINT FILE
SEND FILE
S8812

FIG. 89

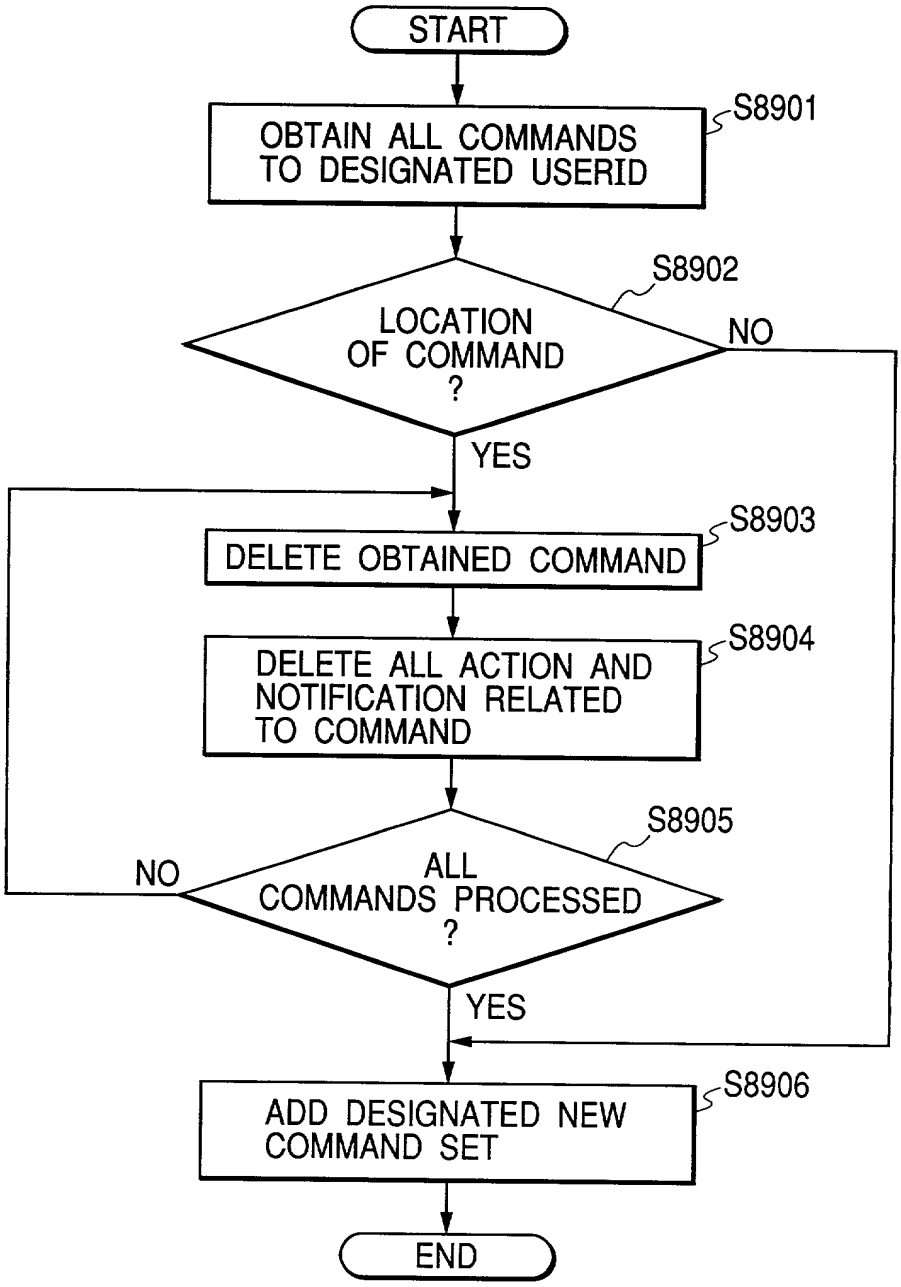
START
OBTAIN ALL COMMANDS TO DESIGNATED USERID
S8901
LOCATION OF COMMAND ?
S8902
NO
YES
DELETE OBTAINED COMMAND
S8903
DELETE ALL ACTION AND NOTIFICATION RELATED TO COMMAND
S8904
ALL COMMANDS PROCESSED ?
S8905
NO
YES
ADD DESIGNATED NEW COMMAND SET
S8906
END

FIG. 90

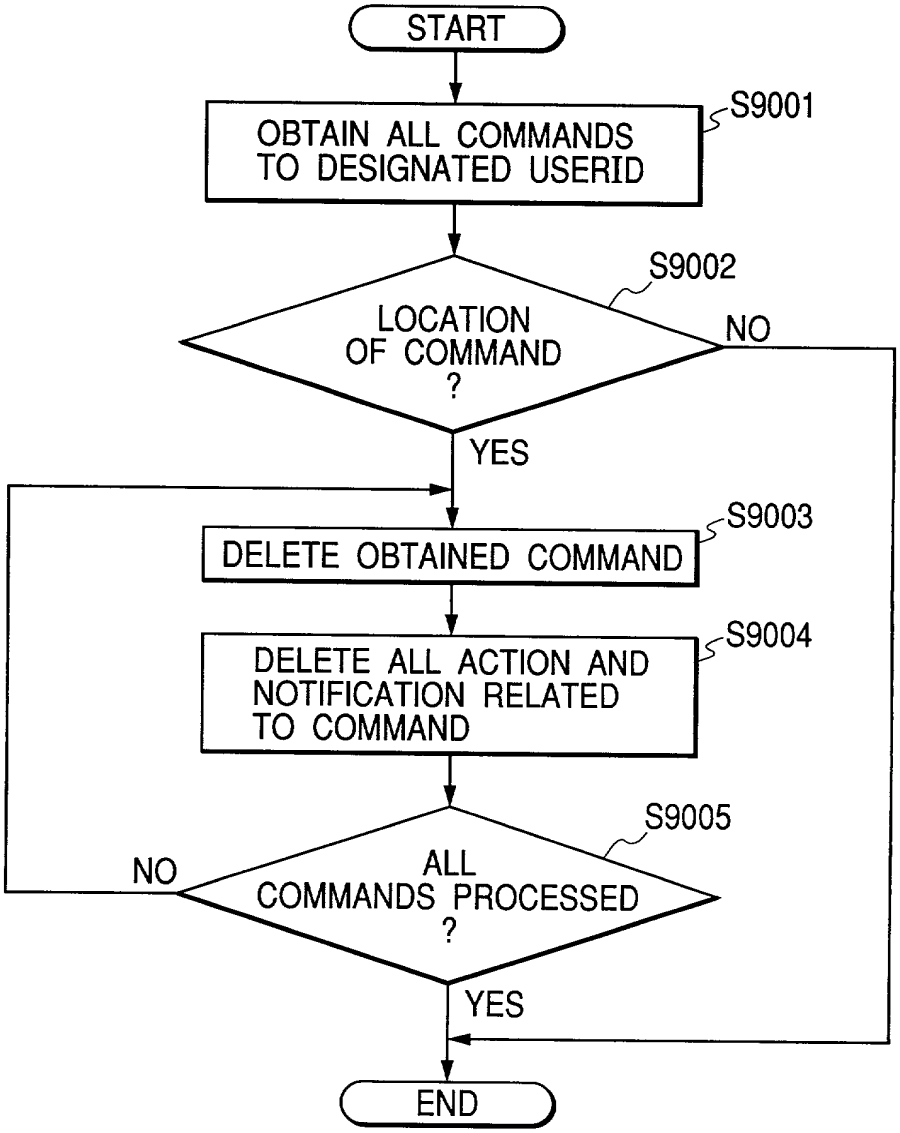
START
OBTAIN ALL COMMANDS TO DESIGNATED USERID
S9001
LOCATION OF COMMAND ?
S9002
NO
YES
DELETE OBTAINED COMMAND
S9003
DELETE ALL ACTION AND NOTIFICATION RELATED TO COMMAND
S9004
ALL COMMANDS PROCESSED ?
S9005
NO
YES
END

FIG. 91

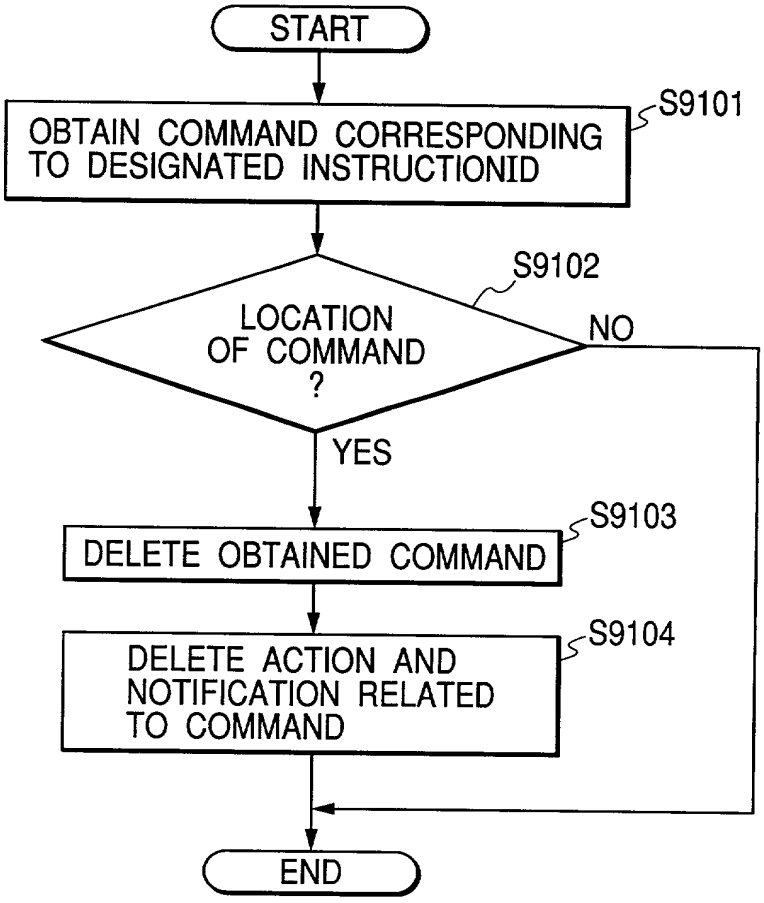
START
OBTAIN COMMAND CORRESPONDING TO DESIGNATED INSTRUCTIONID
S9101
LOCATION OF COMMAND ?
S9102
NO
YES
DELETE OBTAINED COMMAND
S9103
DELETE ACTION AND NOTIFICATION RELATED TO COMMAND
S9104
END

FIG. 92

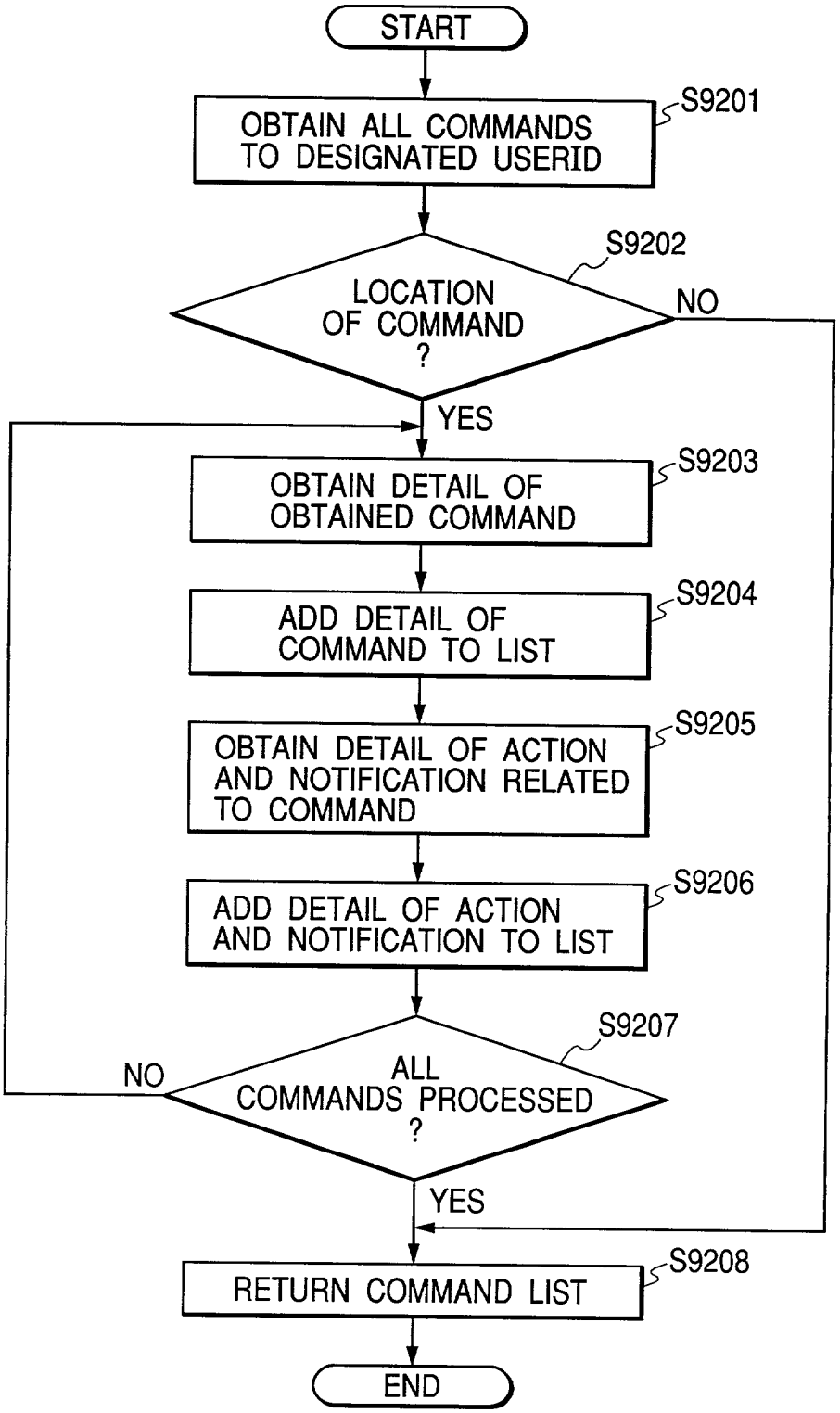

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FIG. 93

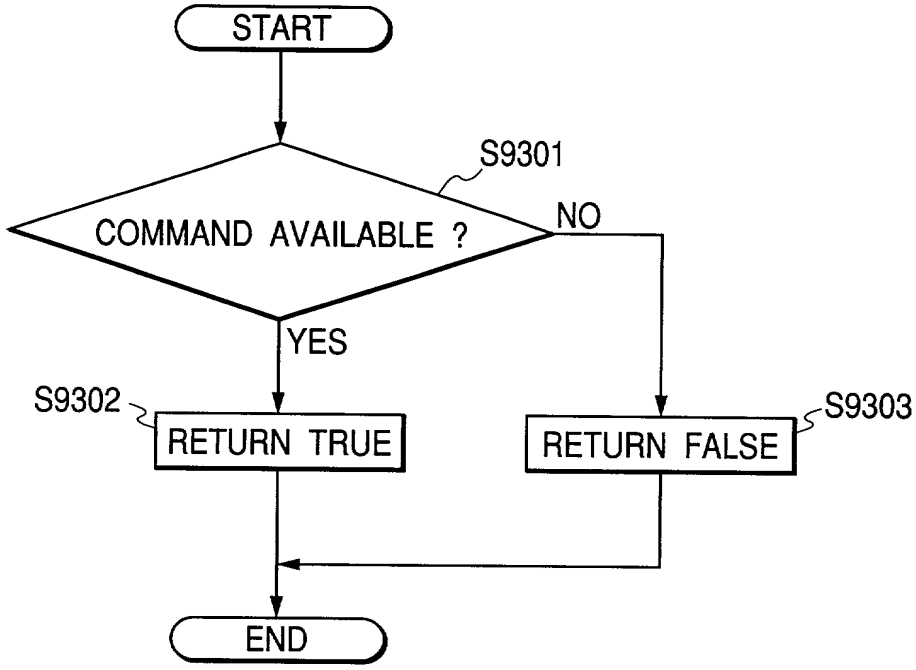
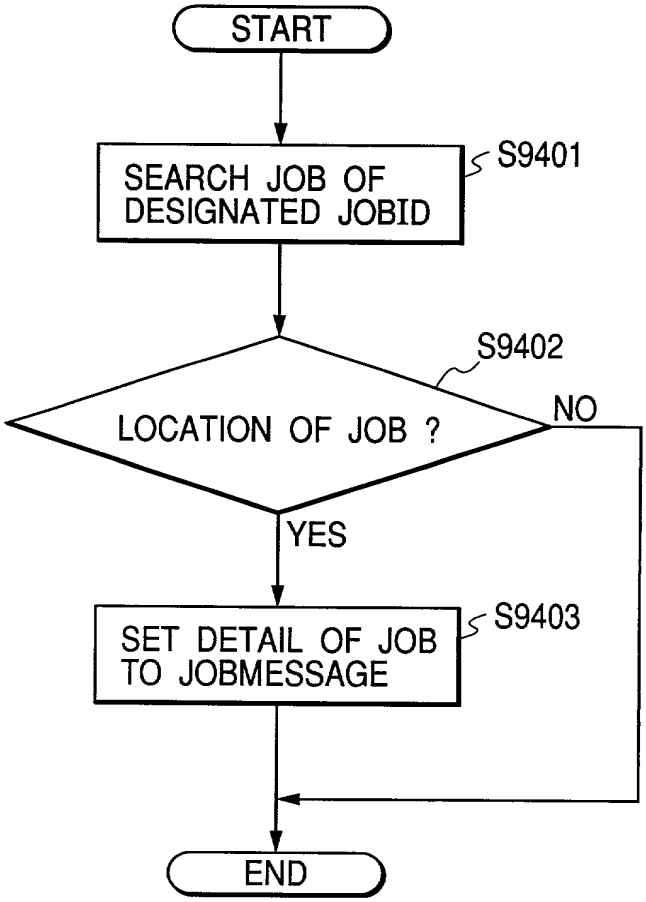
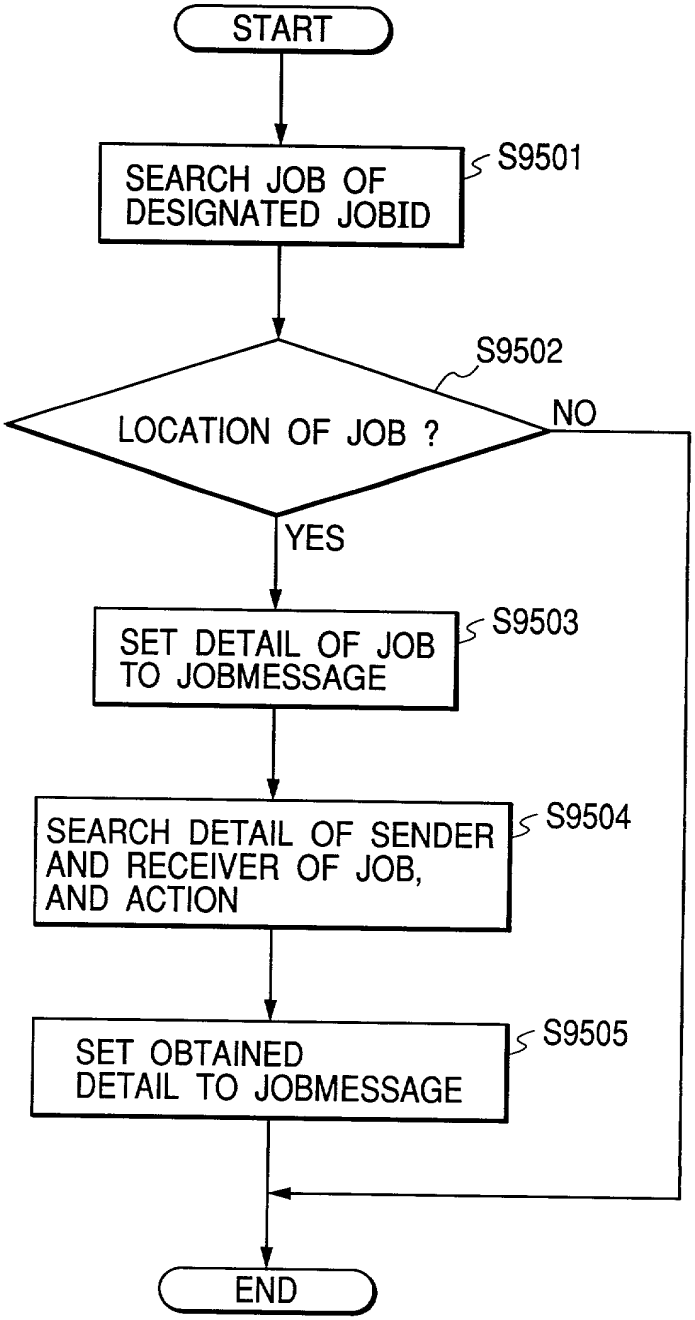


FIG. 94



EP 1 804 168 A1

FIG. 95



EP 1 705 569 A1 20060927

FIG. 96

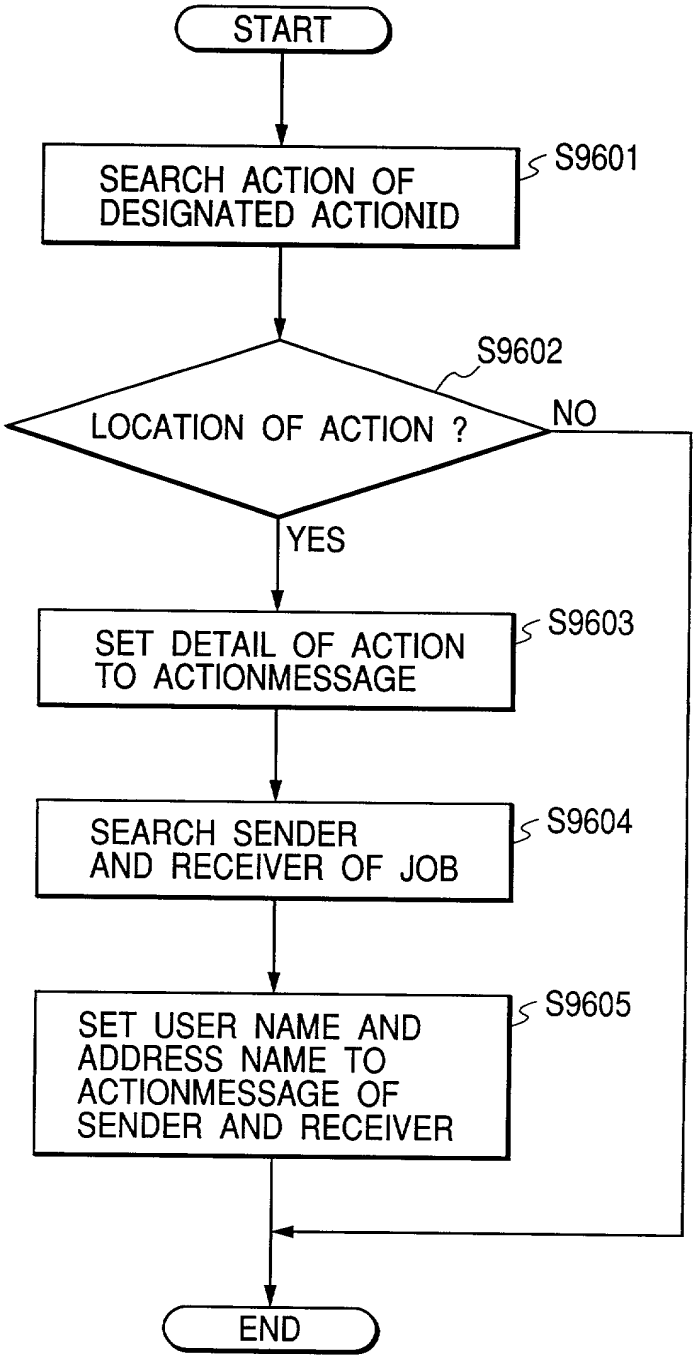

START
SEARCH ACTION OF DESIGNATED ACTIONID
S9601
S9602
LOCATION OF ACTION ?
NO
YES
SET DETAIL OF ACTION TO ACTIONMESSAGE
S9603
SEARCH SENDER AND RECEIVER OF JOB
S9604
SET USER NAME AND ADDRESS NAME TO ACTIONMESSAGE OF SENDER AND RECEIVER
S9605
END

FIG. 97

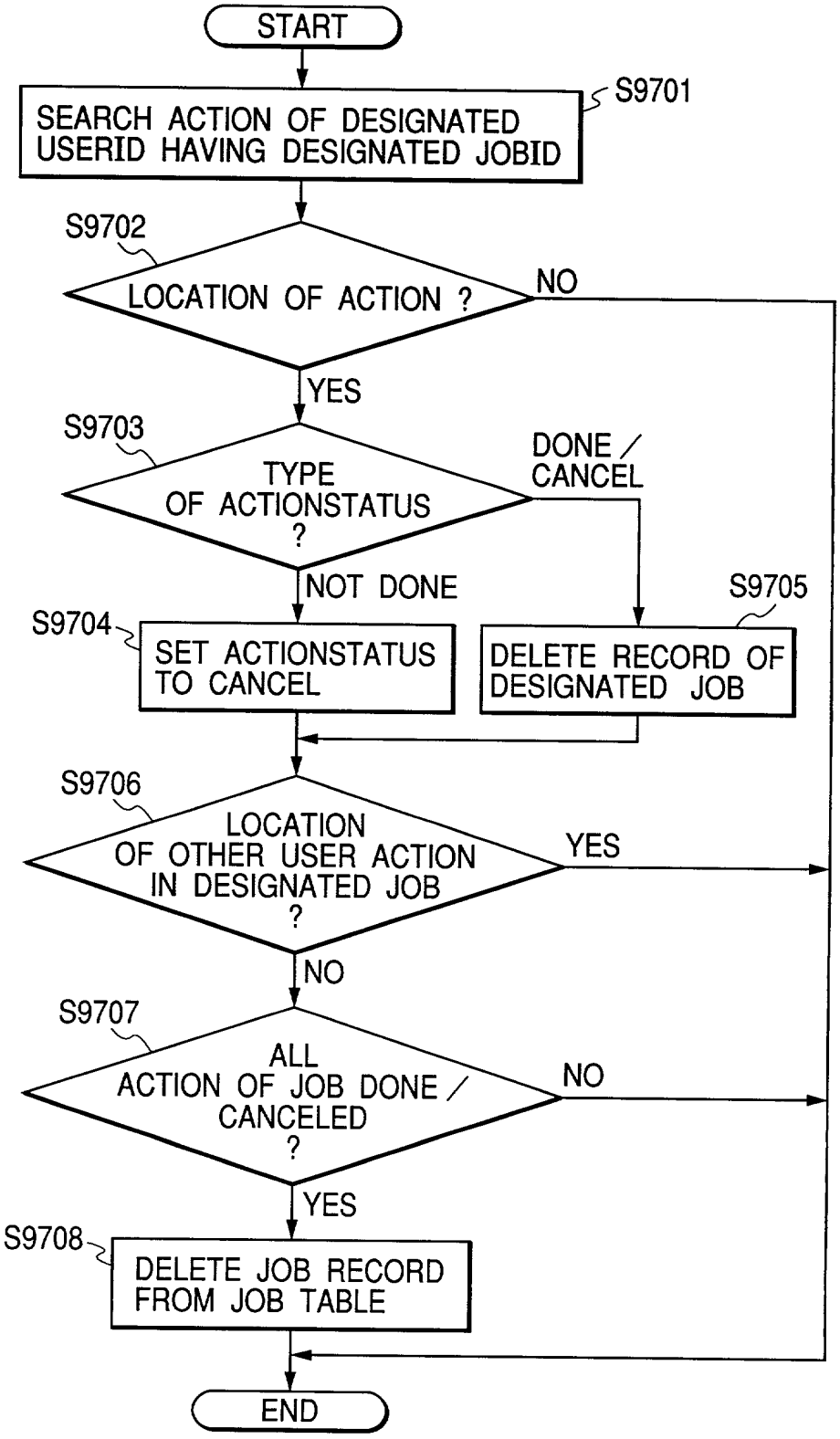

START
SEARCH ACTION OF DESIGNATED USERID HAVING DESIGNATED JOBID
S9701
S9702
LOCATION OF ACTION ?
NO
YES
S9703
TYPE OF ACTIONSTATUS ?
DONE / CANCEL
NOT DONE
S9704
SET ACTIONSTATUS TO CANCEL
S9705
DELETE RECORD OF DESIGNATED JOB
S9706
LOCATION OF OTHER USER ACTION IN DESIGNATED JOB ?
YES
NO
S9707
ALL ACTION OF JOB DONE / CANCELED ?
NO
YES
S9708
DELETE JOB RECORD FROM JOB TABLE
END

FIG. 98

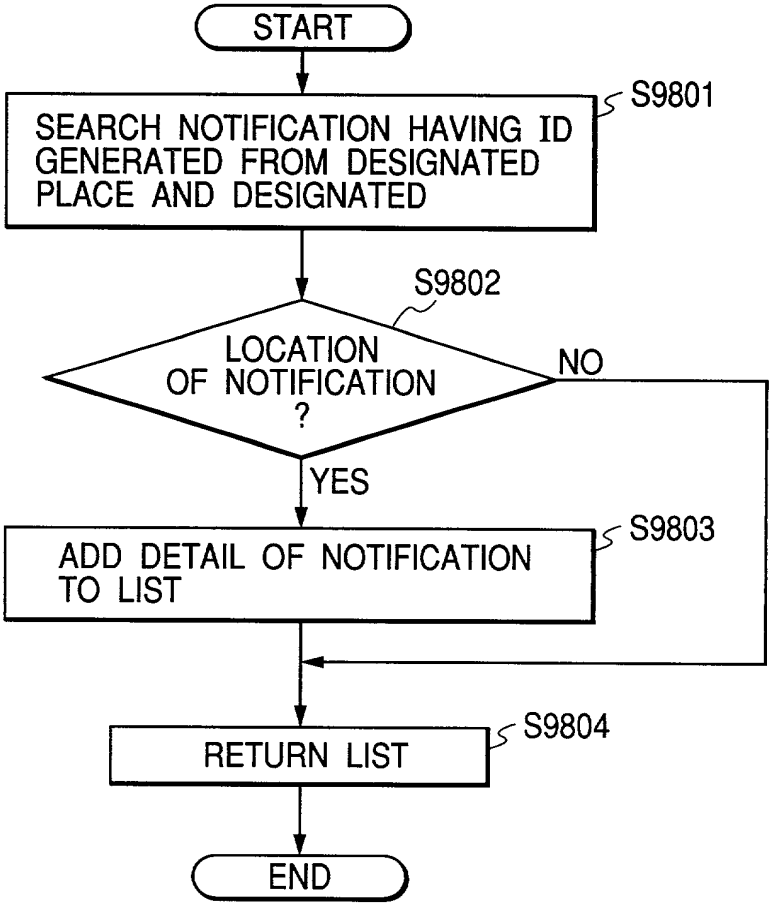

START
SEARCH NOTIFICATION HAVING ID GENERATED FROM DESIGNATED PLACE AND DESIGNATED
S9801
S9802
LOCATION OF NOTIFICATION ?
NO
YES
ADD DETAIL OF NOTIFICATION TO LIST
S9803
RETURN LIST
S9804
END

FIG. 99

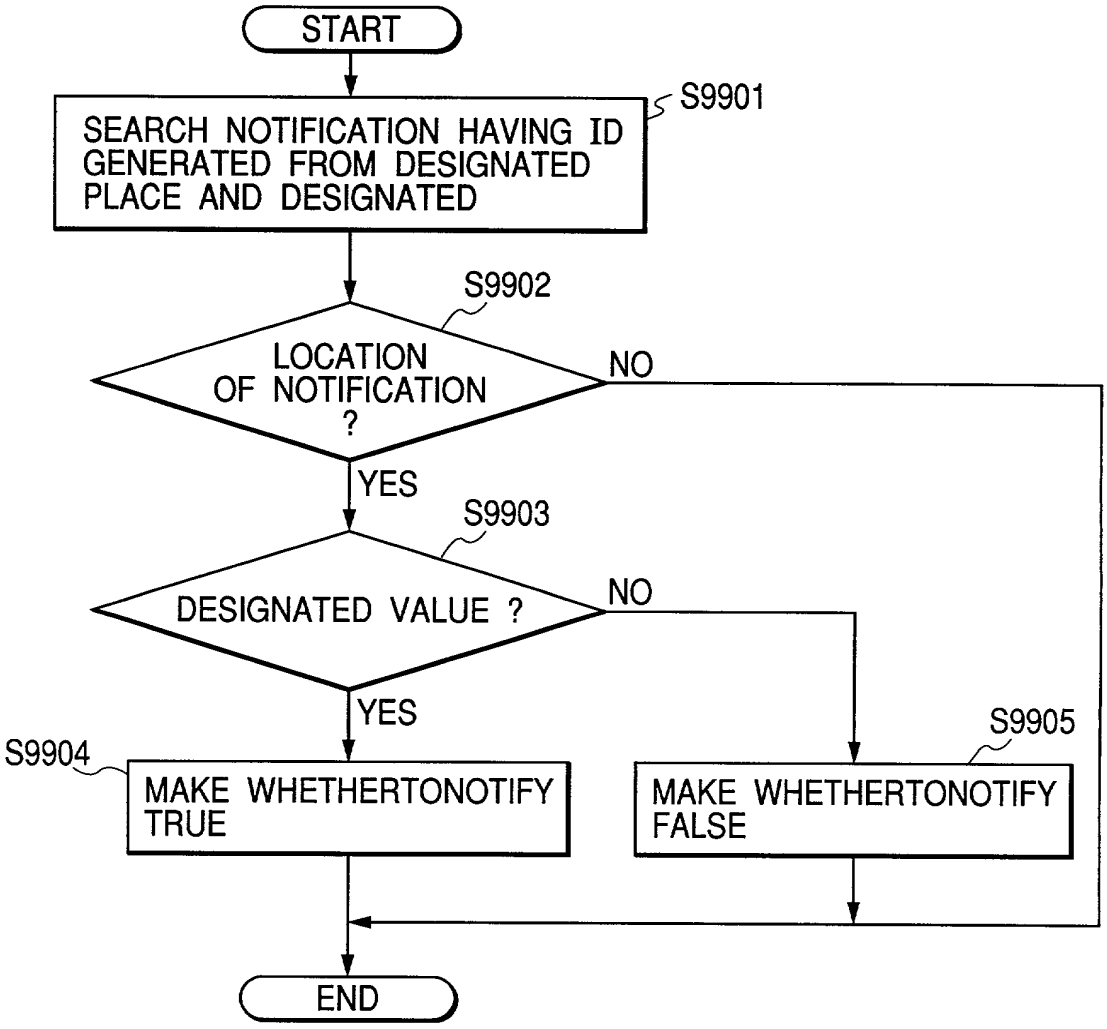

START
SEARCH NOTIFICATION HAVING ID GENERATED FROM DESIGNATED PLACE AND DESIGNATED
S9901
S9902
LOCATION OF NOTIFICATION ?
NO
YES
S9903
DESIGNATED VALUE ?
NO
YES
S9904
MAKE WHETHERTONOTIFY TRUE
S9905
MAKE WHETHERTONOTIFY FALSE
END

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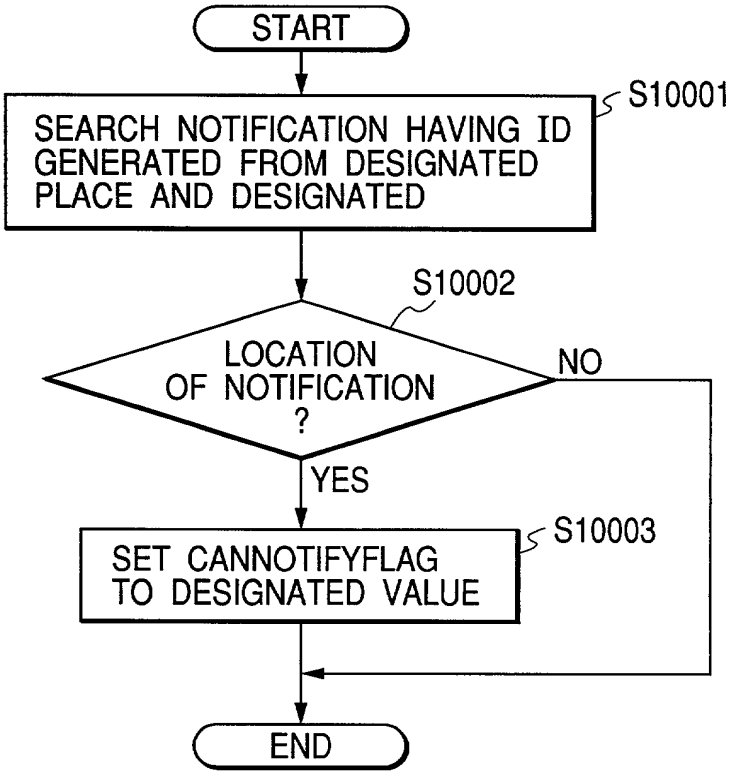
FIG. 100



EP3 3 450 072 A1 2019.03.06

FIG. 101

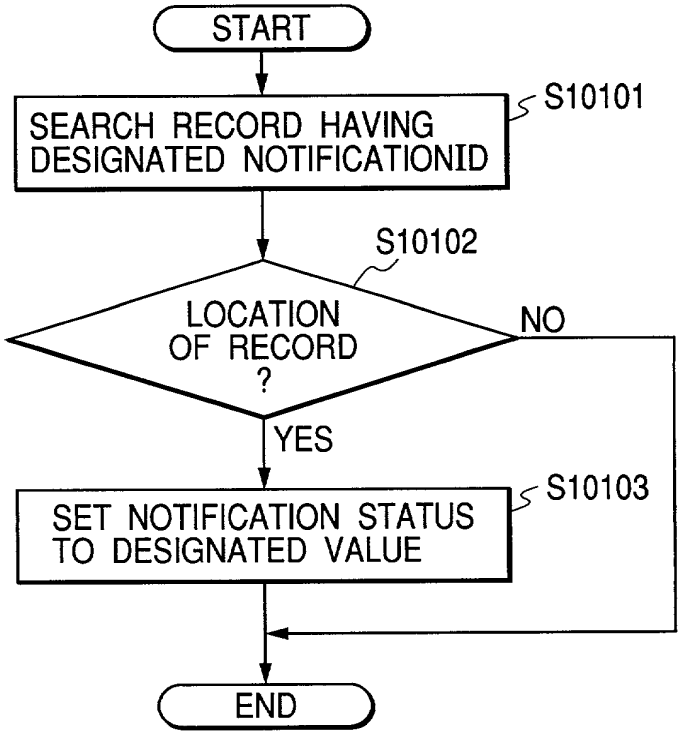


FIG. 102

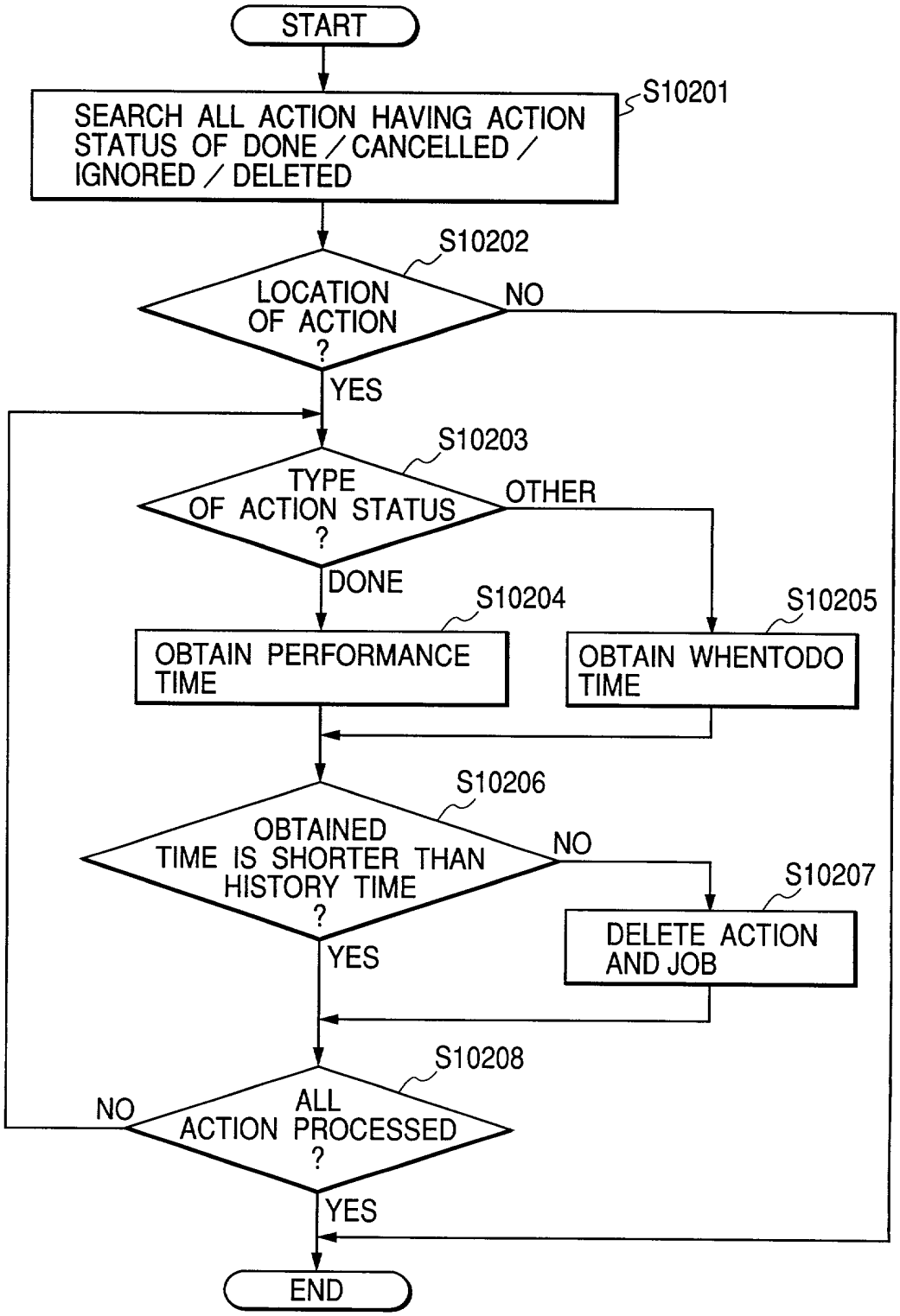

START
SEARCH ALL ACTION HAVING ACTION STATUS OF DONE / CANCELLED / IGNORED / DELETED
S10201
S10202
LOCATION OF ACTION ?
NO
YES
S10203
TYPE OF ACTION STATUS ?
OTHER
DONE
S10204
OBTAIN PERFORMANCE TIME
S10205
OBTAIN WHENTODO TIME
S10206
OBTAINED TIME IS SHORTER THAN HISTORY TIME ?
NO
S10207
DELETE ACTION AND JOB
YES
S10208
NO
ALL ACTION PROCESSED ?
YES
END

FIG. 103

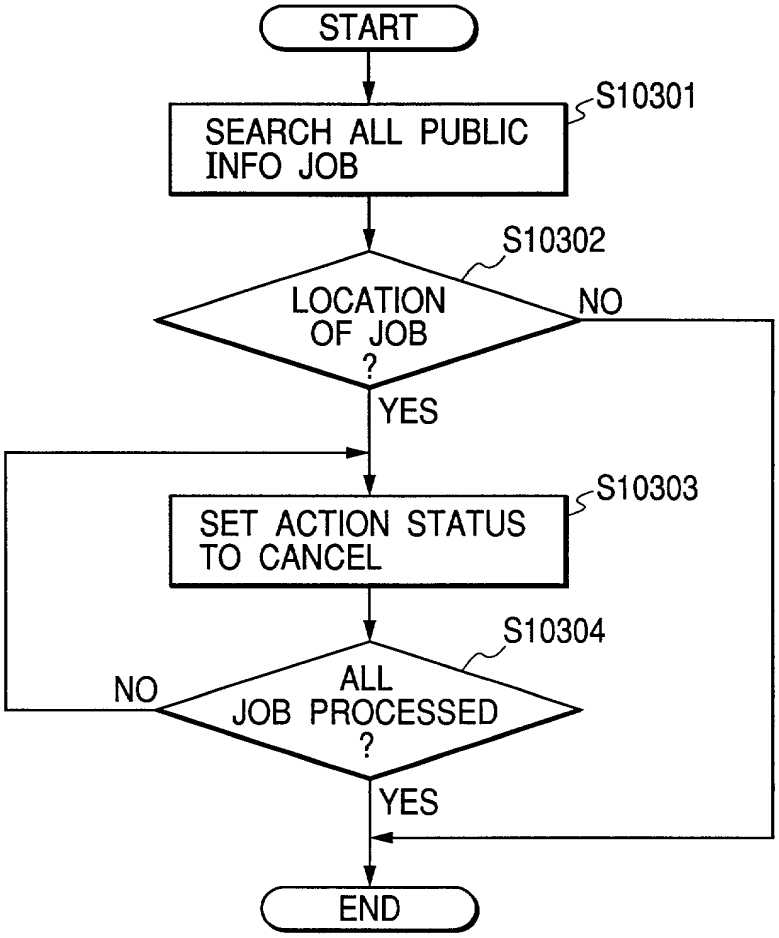

START
S10301
SEARCH ALL PUBLIC INFO JOB
S10302
LOCATION OF JOB ?
NO
YES
S10303
SET ACTION STATUS TO CANCEL
S10304
ALL JOB PROCESSED ?
NO
YES
END

FIG. 104

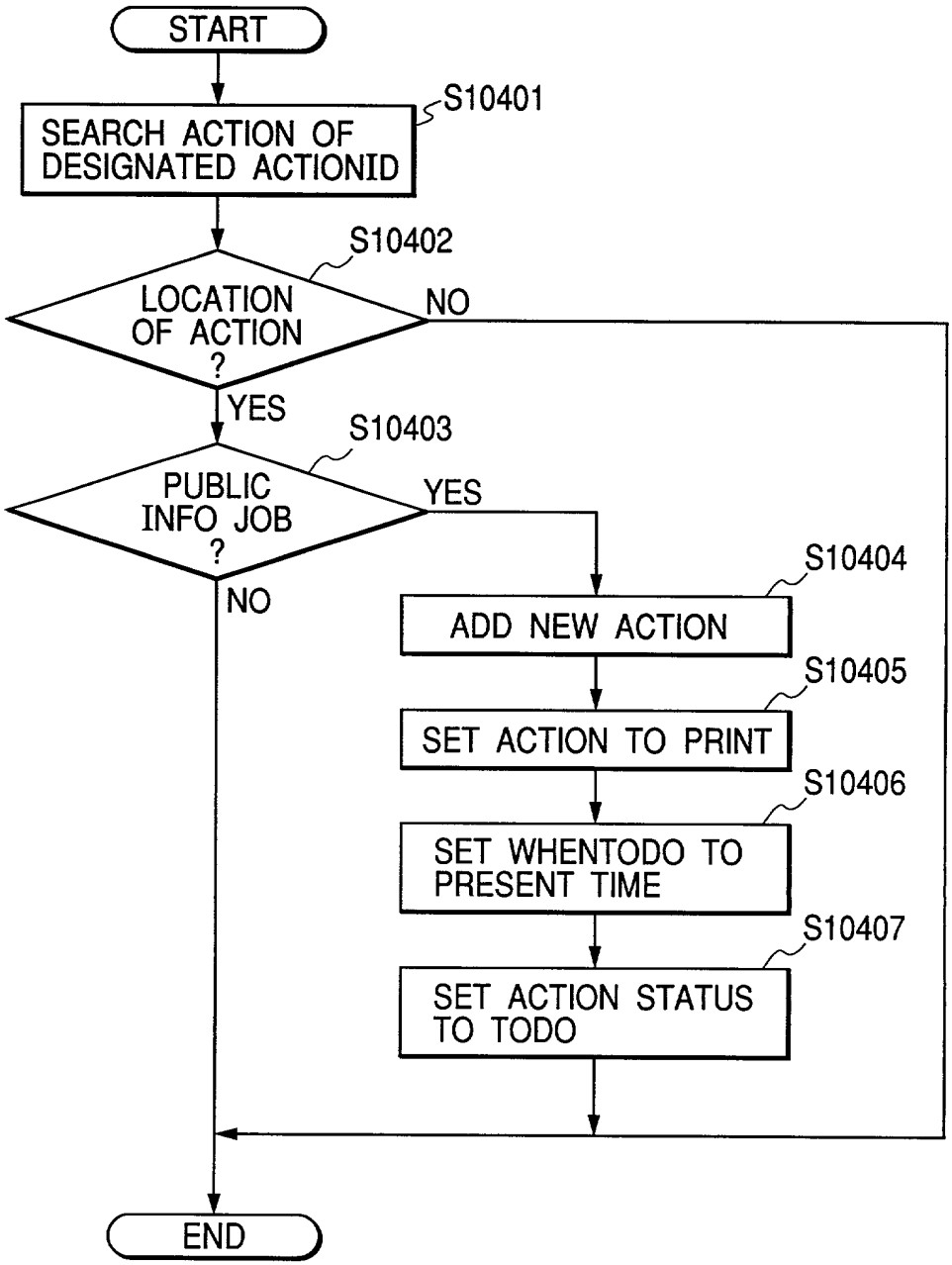


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FIG. 105

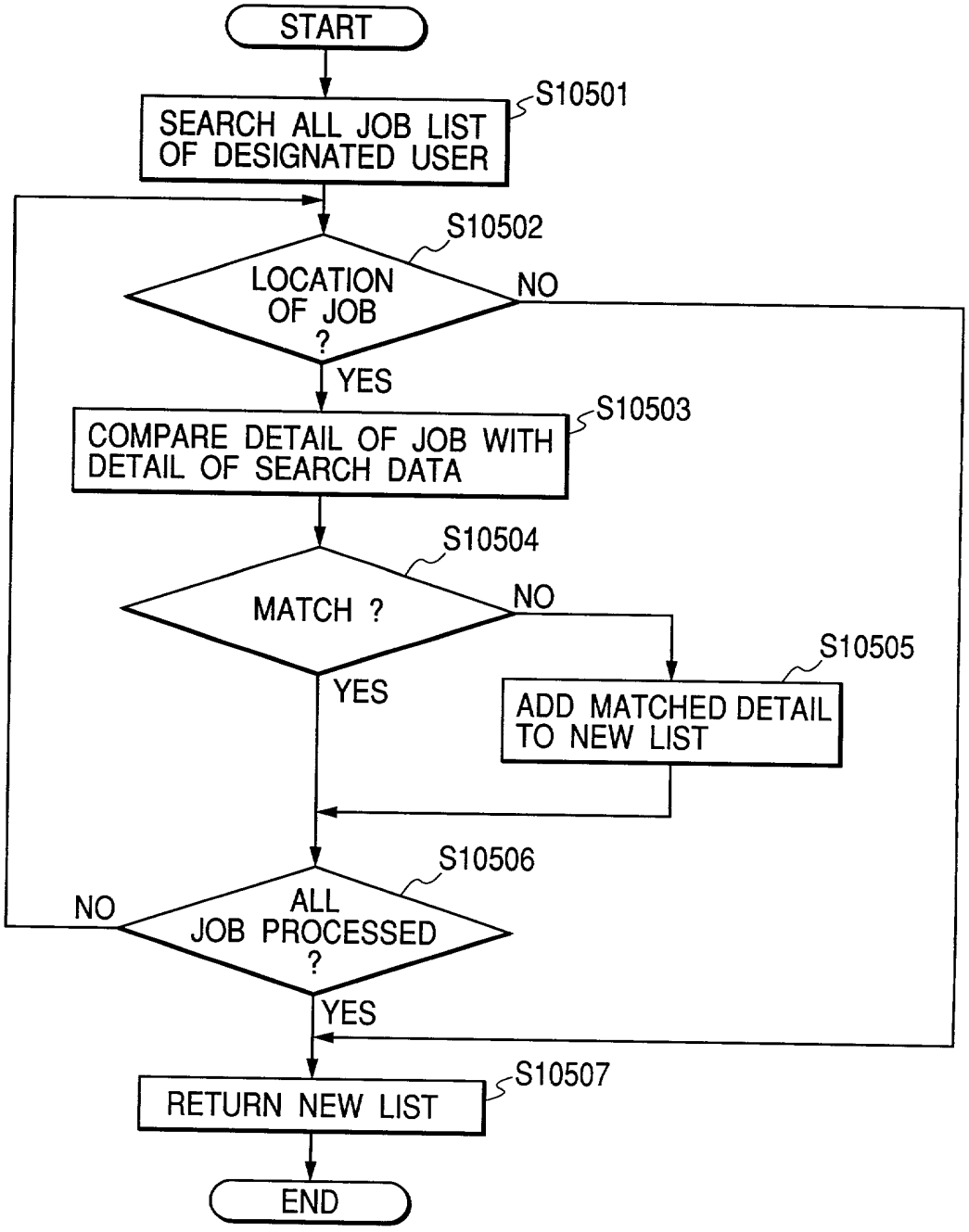

START
SEARCH ALL JOB LIST OF DESIGNATED USER
S10501
LOCATION OF JOB ?
S10502
NO
YES
COMPARE DETAIL OF JOB WITH DETAIL OF SEARCH DATA
S10503
MATCH ?
S10504
NO
YES
ADD MATCHED DETAIL TO NEW LIST
S10505
ALL JOB PROCESSED ?
S10506
NO
YES
RETURN NEW LIST
S10507
END

FIG. 106

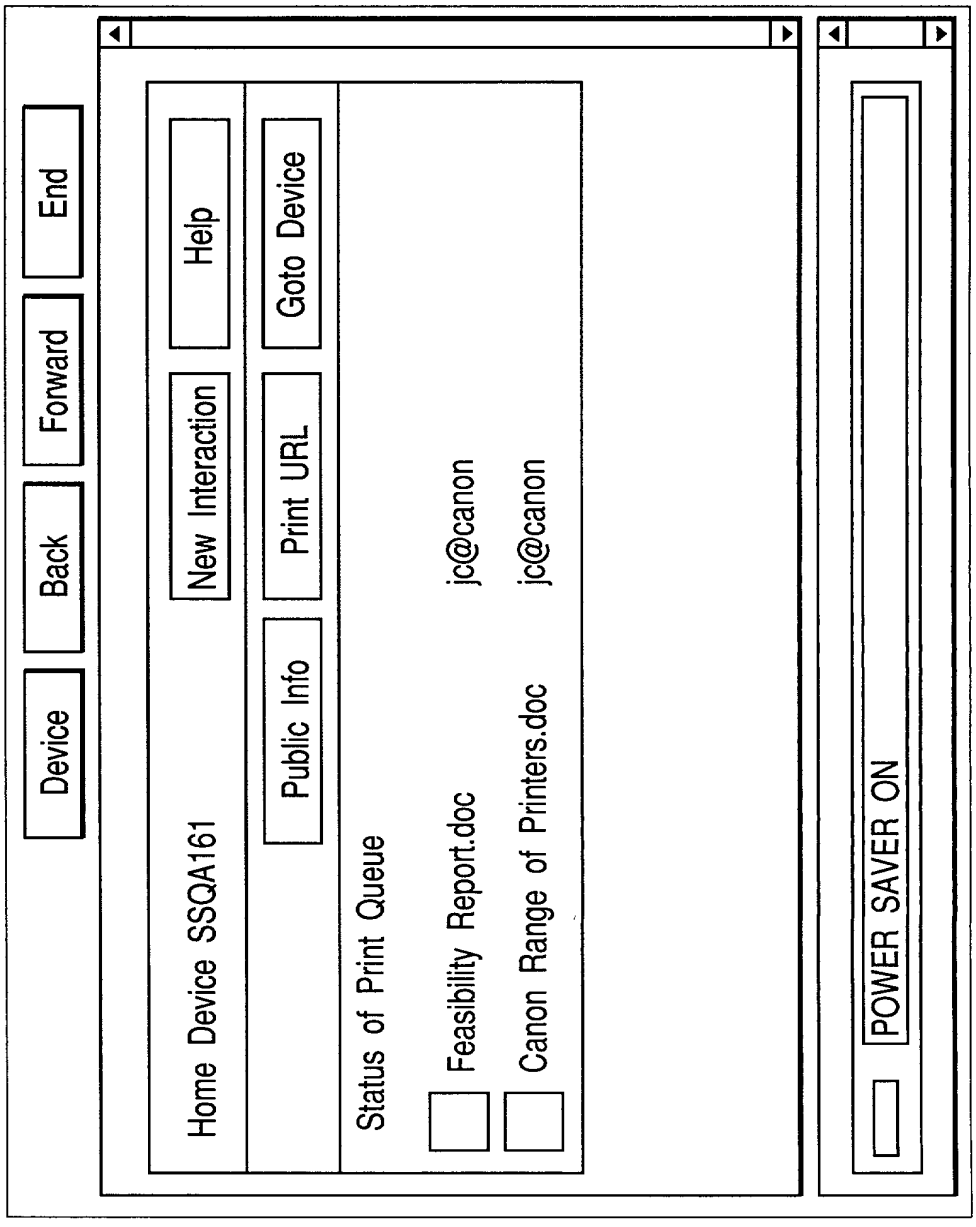

Device
Back
Forward
End
Home Device SSQA161
New Interaction
Help
Public Info
Print URL
Goto Device
Status of Print Queue
Feasibility Report.doc
jc@canon
Canon Range of Printers.doc
jc@canon
POWER SAVER ON

FIG. 107

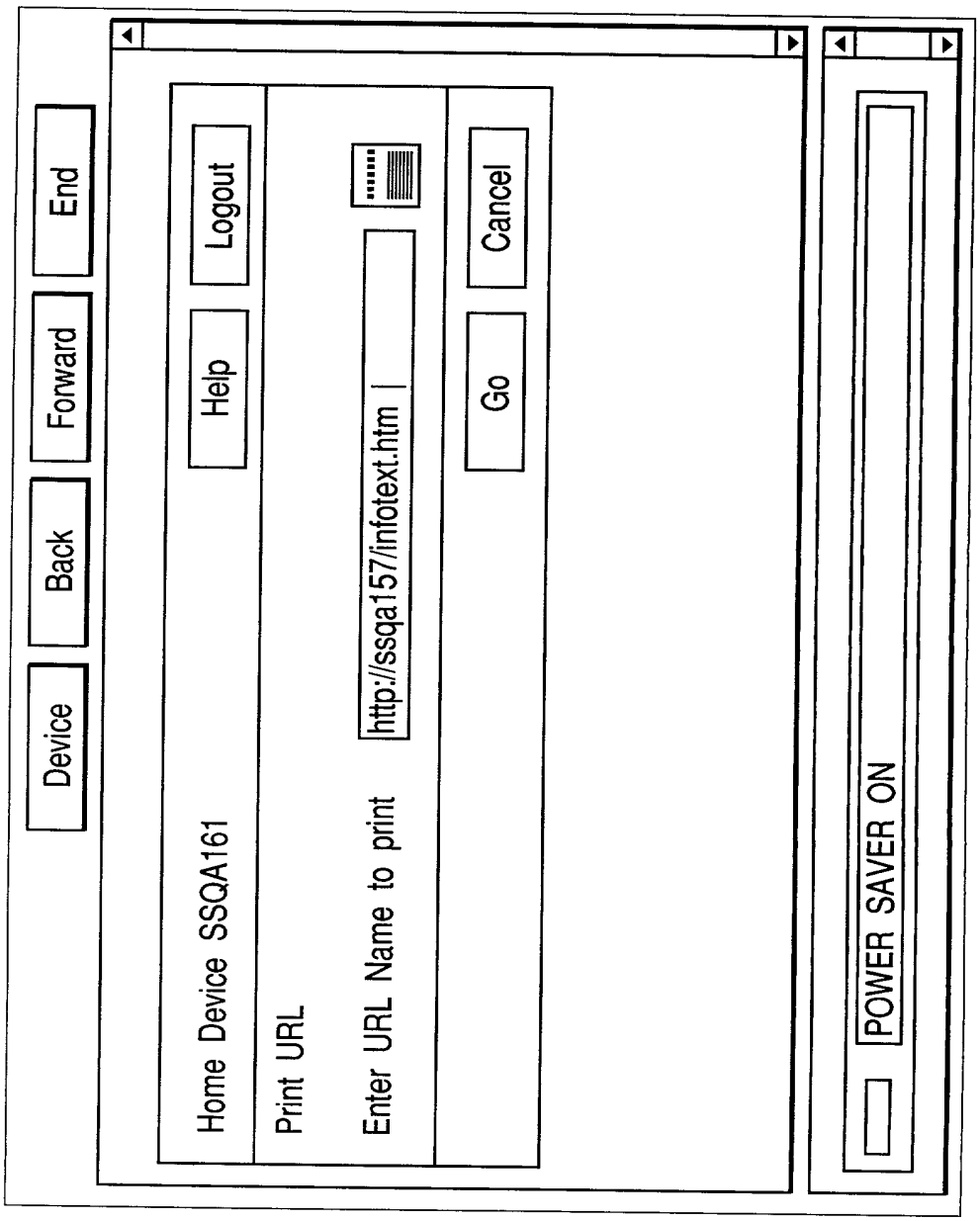

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Print URL
Enter URL Name to print
http://ssqa157/infotext.htm
Go
Cancel
POWER SAVER ON

FIG. 108

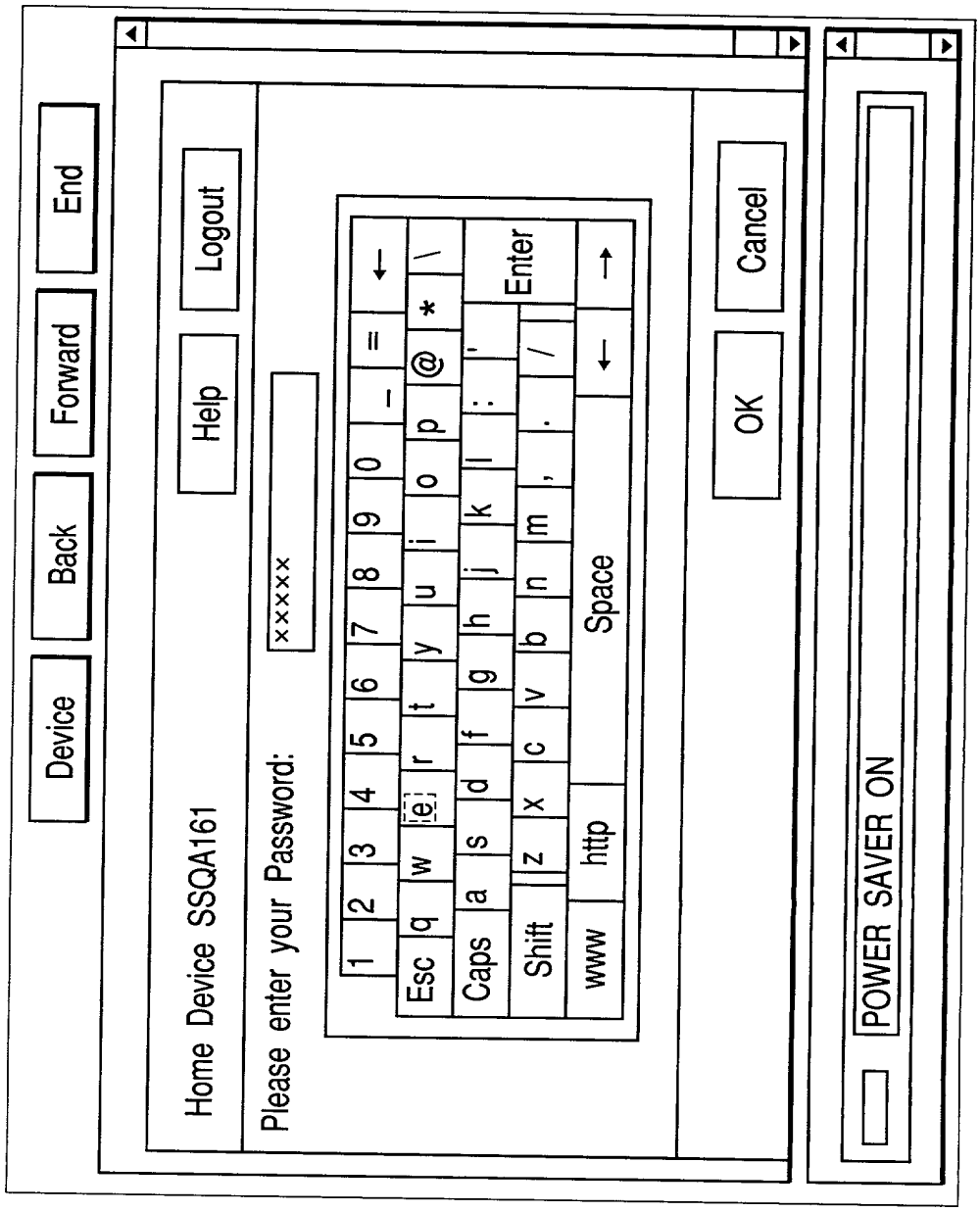

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Please enter your Password:
xxxxx
OK
Cancel
POWER SAVER ON
Esc
Caps
Shift
www
http
Space
Enter

FIG. 109

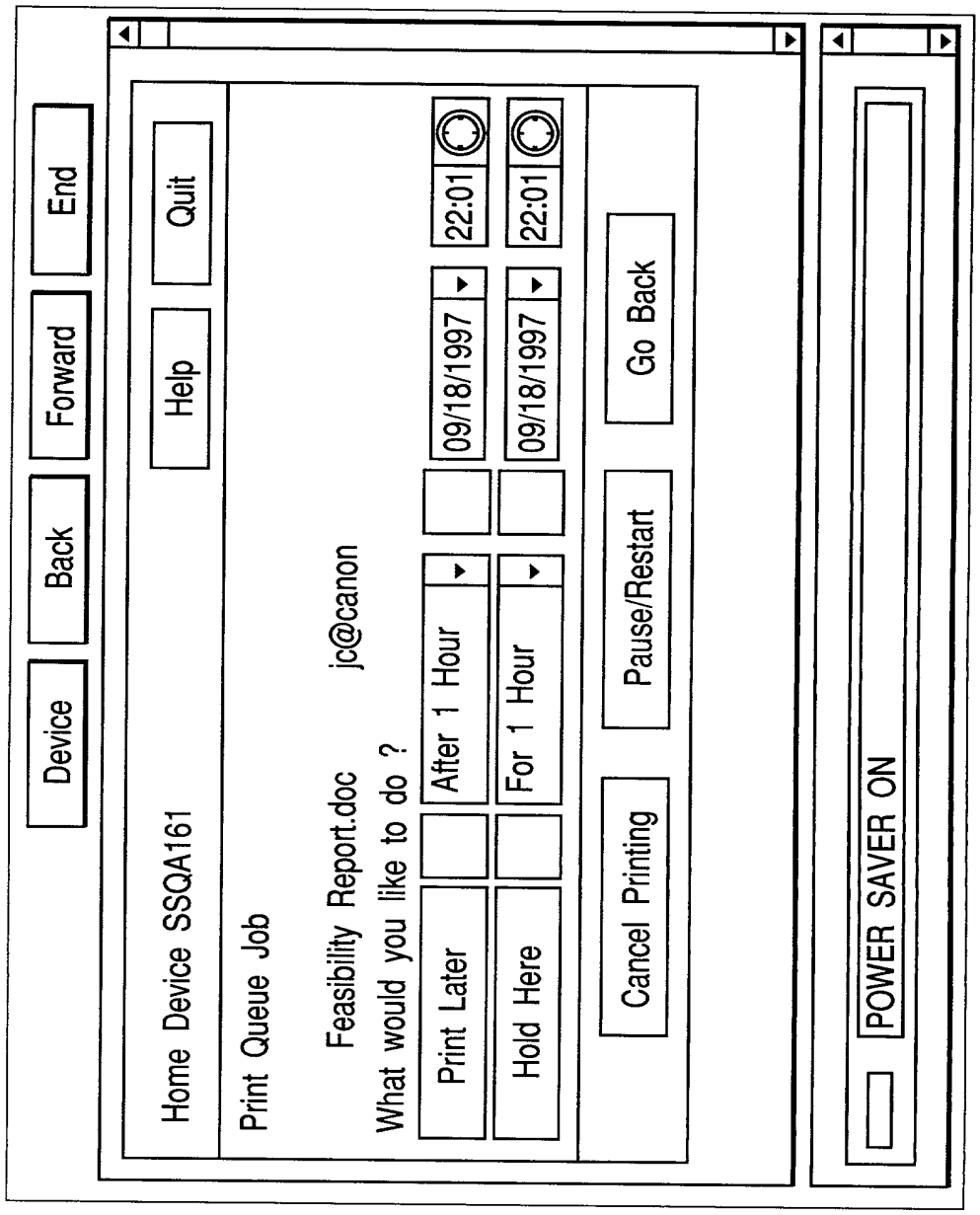

Device
Back
Forward
End
Home Device SSQA161
Help
Quit
Print Queue Job
Feasibility Report.doc
jc@canon
What would you like to do ?
Print Later
After 1 Hour
09/18/1997
22:01
Hold Here
For 1 Hour
09/18/1997
22:01
Cancel Printing
Pause/Restart
Go Back
POWER SAVER ON

FIG. 110

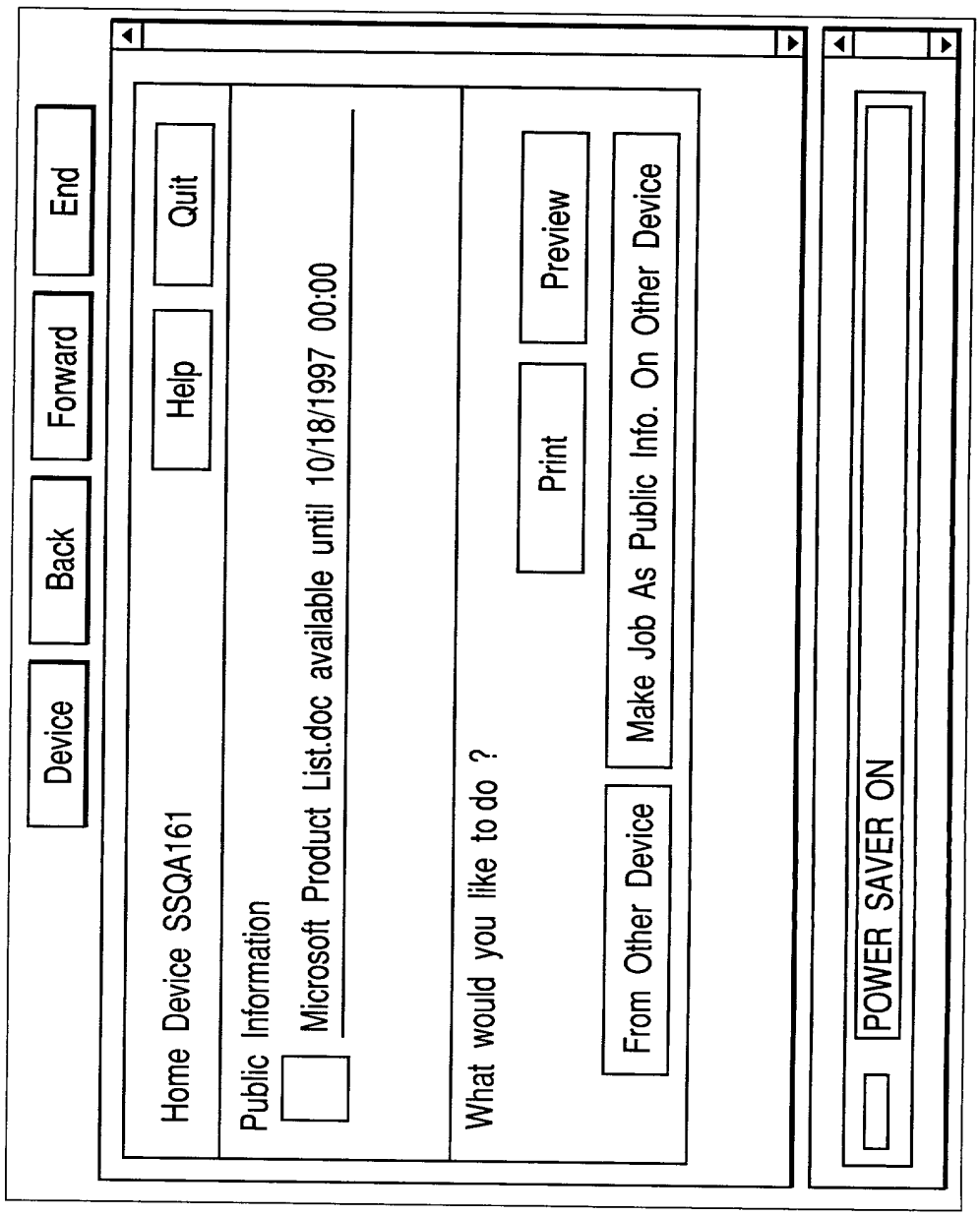

Device
Back
Forward
End
Home Device SSQA161
Help
Quit
Public Information
Microsoft Product List.doc available until 10/18/1997 00:00
What would you like to do ?
Print
Preview
From Other Device
Make Job As Public Info. On Other Device
POWER SAVER ON

FIG. 111

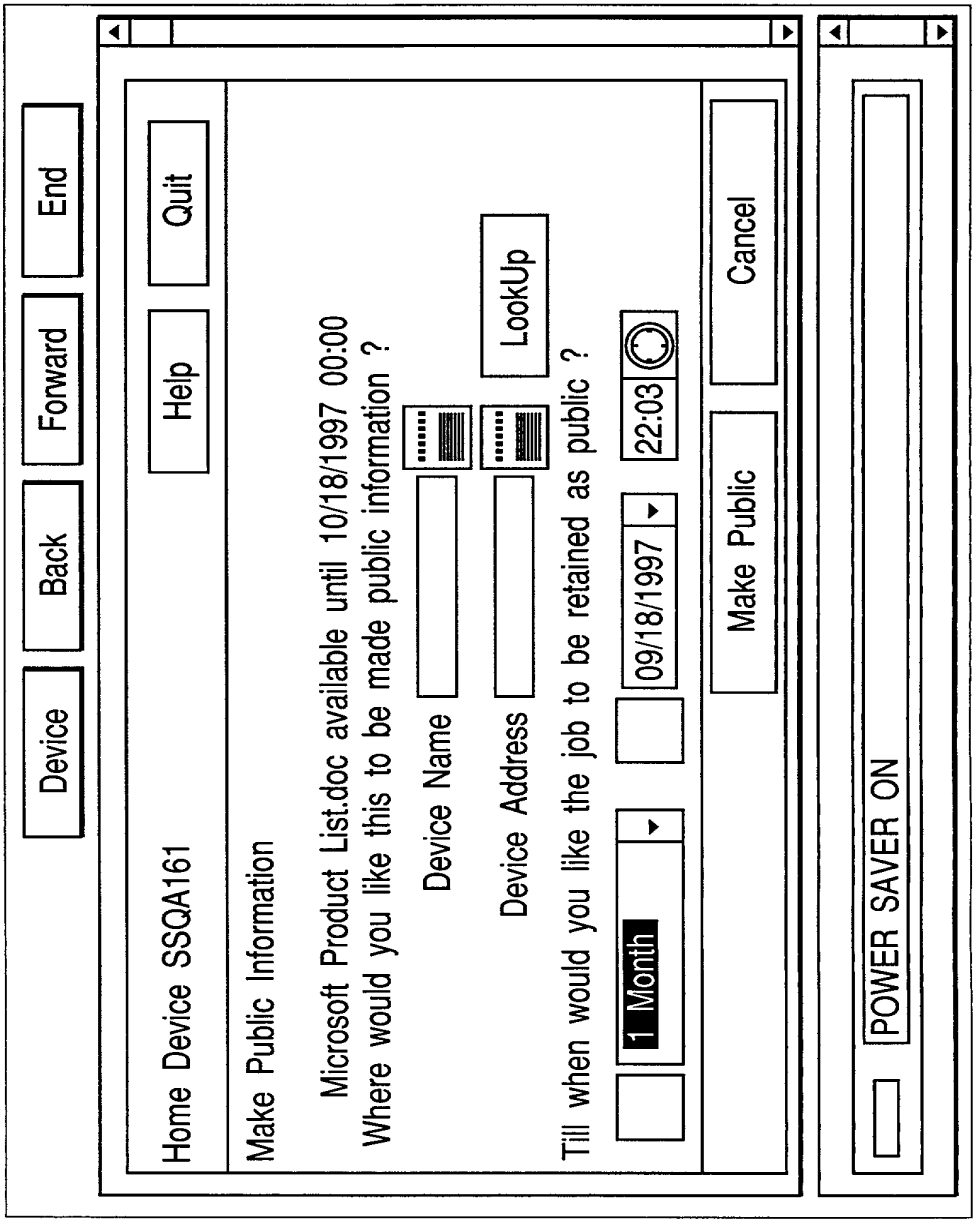

Device
Back
Forward
End
Home Device SSQA161
Help
Quit
Make Public Information
Microsoft Product List.doc available until 10/18/1997 00:00
Where would you like this to be made public information ?
Device Name
Device Address
LookUp
Till when would you like the job to be retained as public ?
1 Month
09/18/1997
22:03
Make Public
Cancel
POWER SAVER ON

FIG. 112

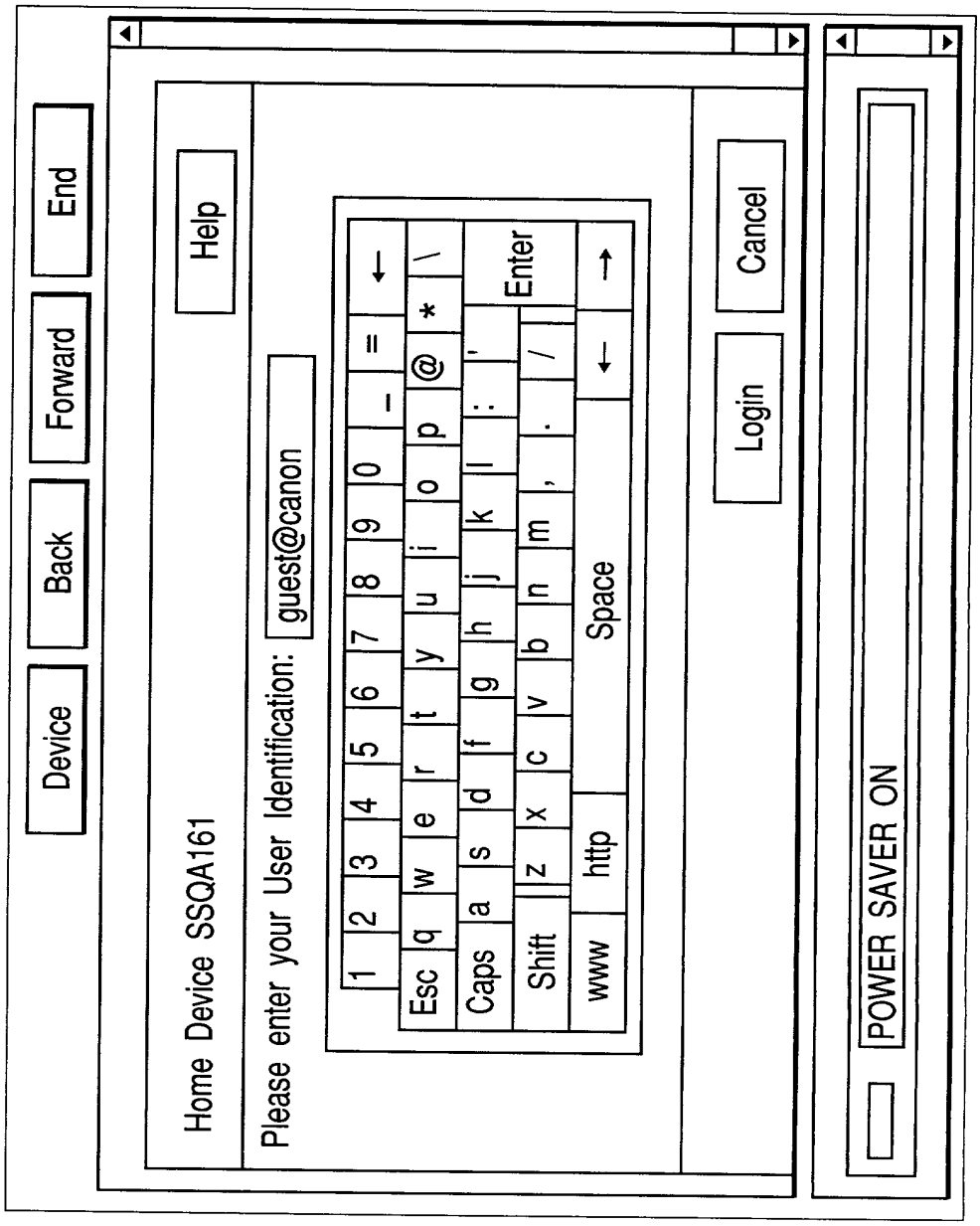

Device
Back
Forward
End
Help
Home Device SSQA161
Please enter your User Identification: guest@canon
Login
Cancel
POWER SAVER ON

FIG. 113

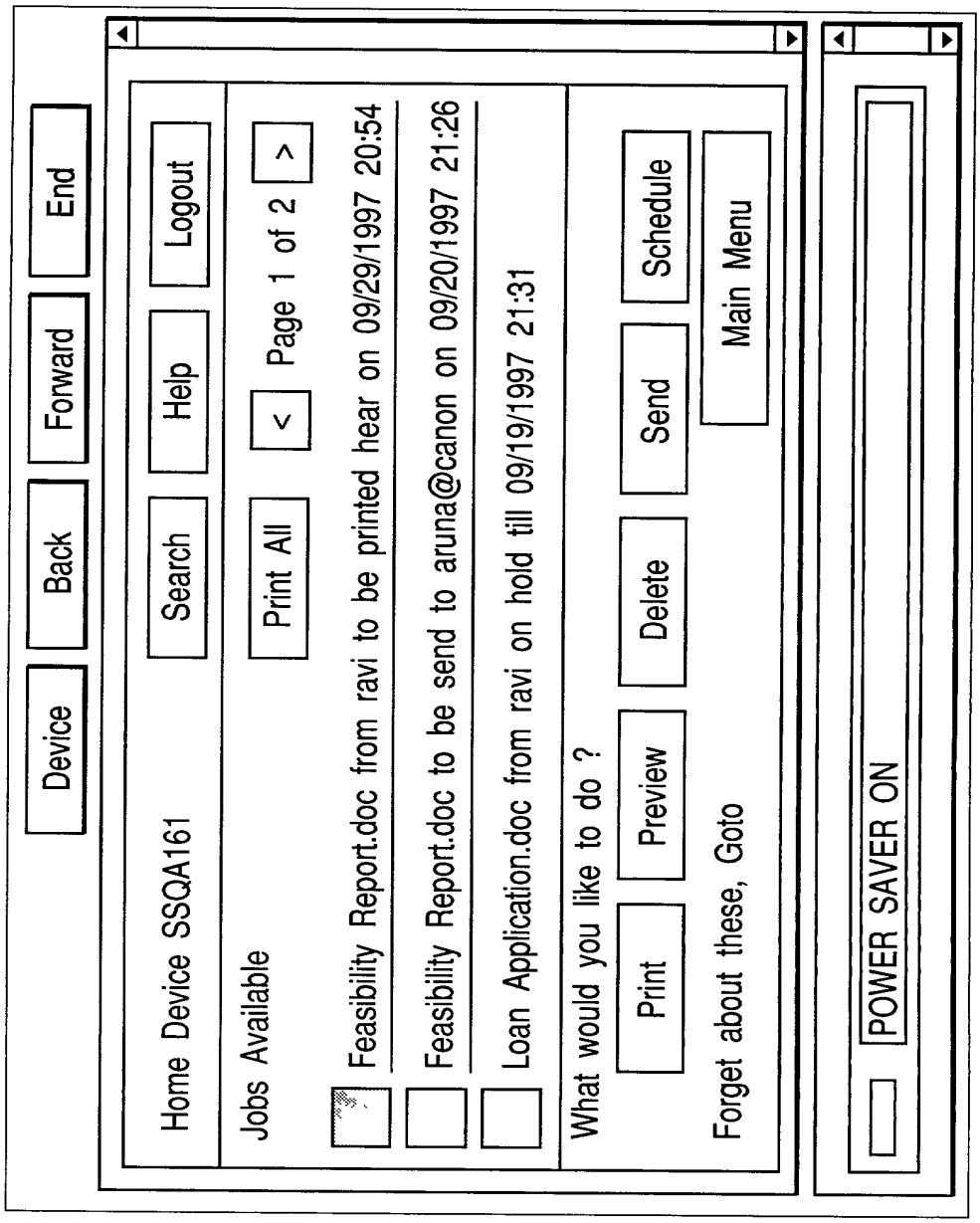

Device
Back
Forward
End
Home Device SSQA161
Search
Help
Logout
Jobs Available
Print All
< Page 1 of 2 >
Feasibility Report.doc from ravi to be printed hear on 09/29/1997 20:54
Feasibility Report.doc to be send to aruna@canon on 09/20/1997 21:26
Loan Application.doc from ravi on hold till 09/19/1997 21:31
What would you like to do ?
Print
Preview
Delete
Send
Schedule
Forget about these, Goto
Main Menu
POWER SAVER ON

FIG. 114

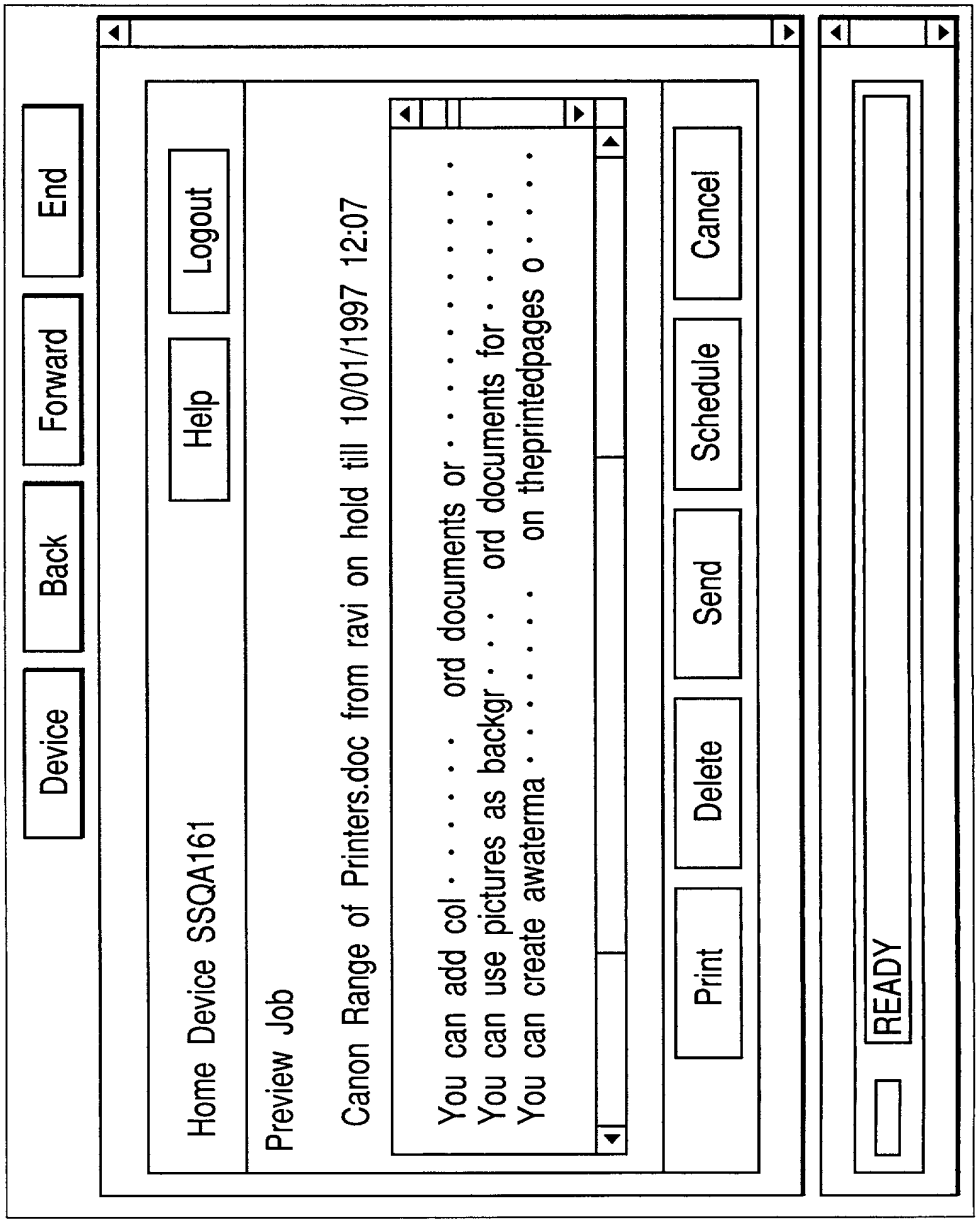

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Preview Job
Canon Range of Printers.doc from ravi on hold till 10/01/1997 12:07
You can add col . . . . . ord documents or . . . . . .
You can use pictures as backgr . . . ord documents for . . . . .
You can create awaterma . . . . . on theprintedpages o . . . .
Print
Delete
Send
Schedule
Cancel
READY

FIG. 115

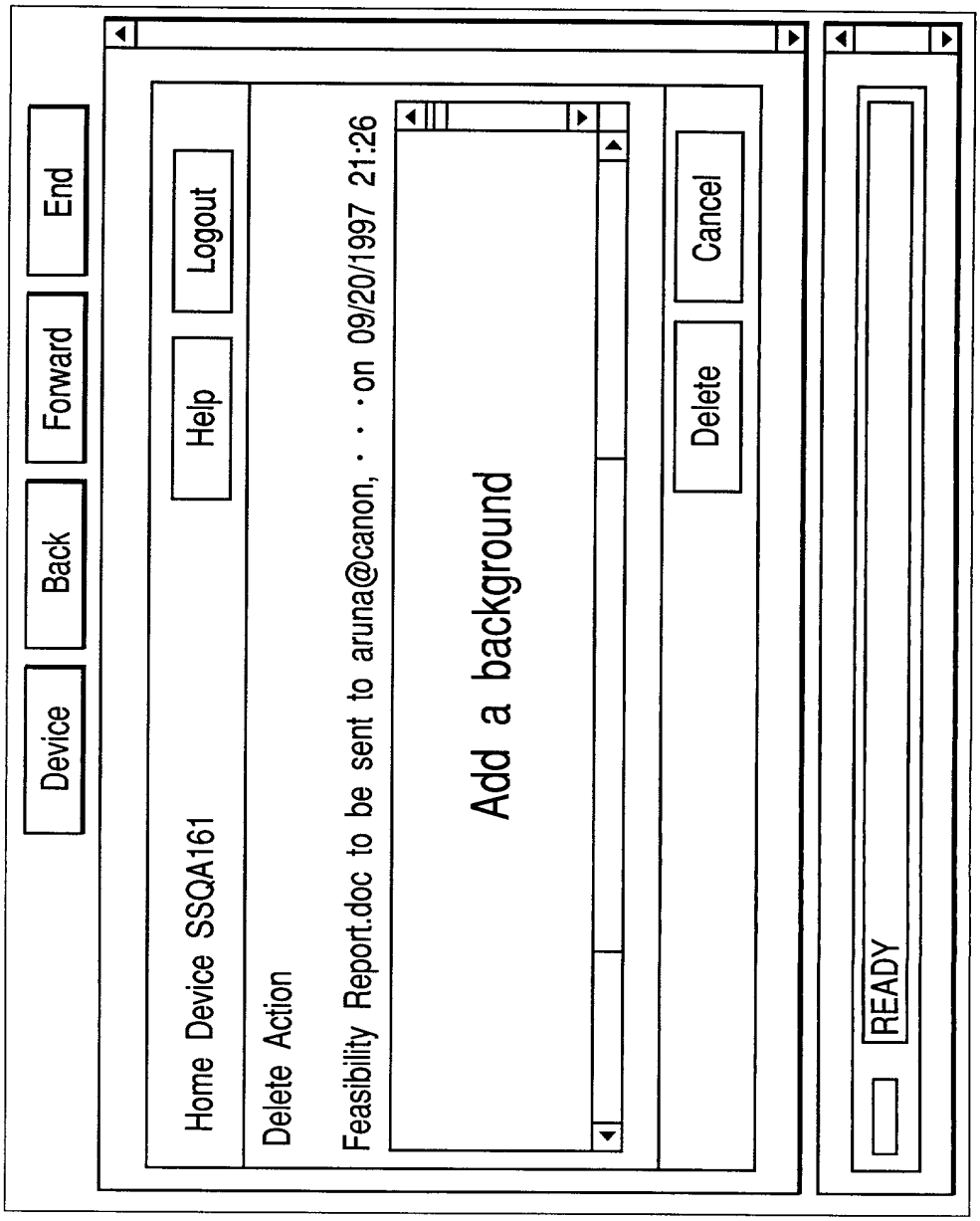

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Delete Action
Feasibility Report.doc to be sent to aruna@canon, · · ·on 09/20/1997 21:26
Add a background
Delete
Cancel
READY

FIG. 116

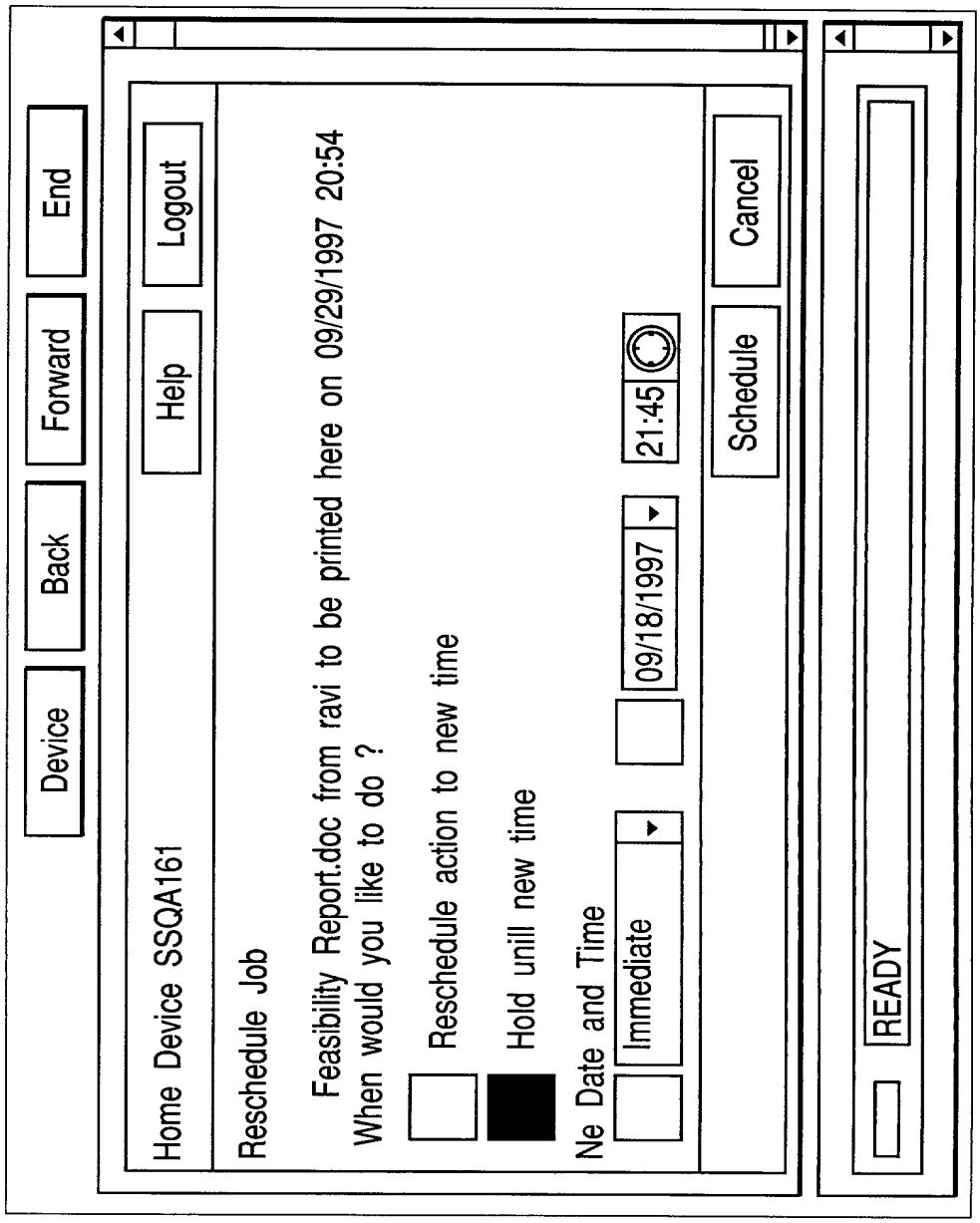

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Reschedule Job
Feasibility Report.doc from ravi to be printed here on 09/29/1997 20:54
When would you like to do ?
Reschedule action to new time
Hold unill new time
Ne Date and Time
Immediate
09/18/1997
21:45
Schedule
Cancel
READY

FIG. 117

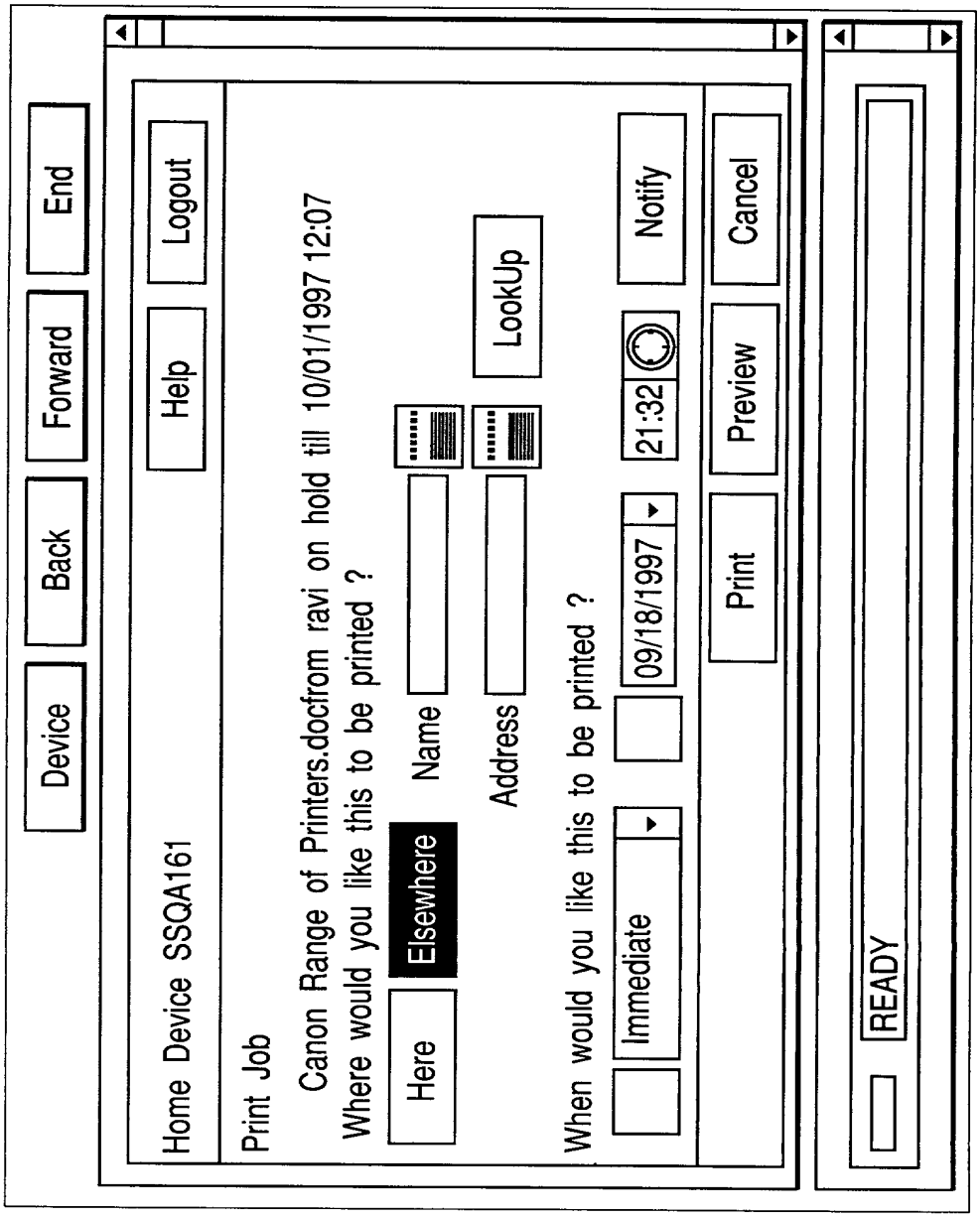

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Print Job
Canon Range of Printers.docfrom ravi on hold till 10/01/1997 12:07
Where would you like this to be printed ?
Here
Elsewhere
Name
Address
LookUp
When would you like this to be printed ?
Immediate
09/18/1997
21:32
Notify
Print
Preview
Cancel
READY

FIG. 118

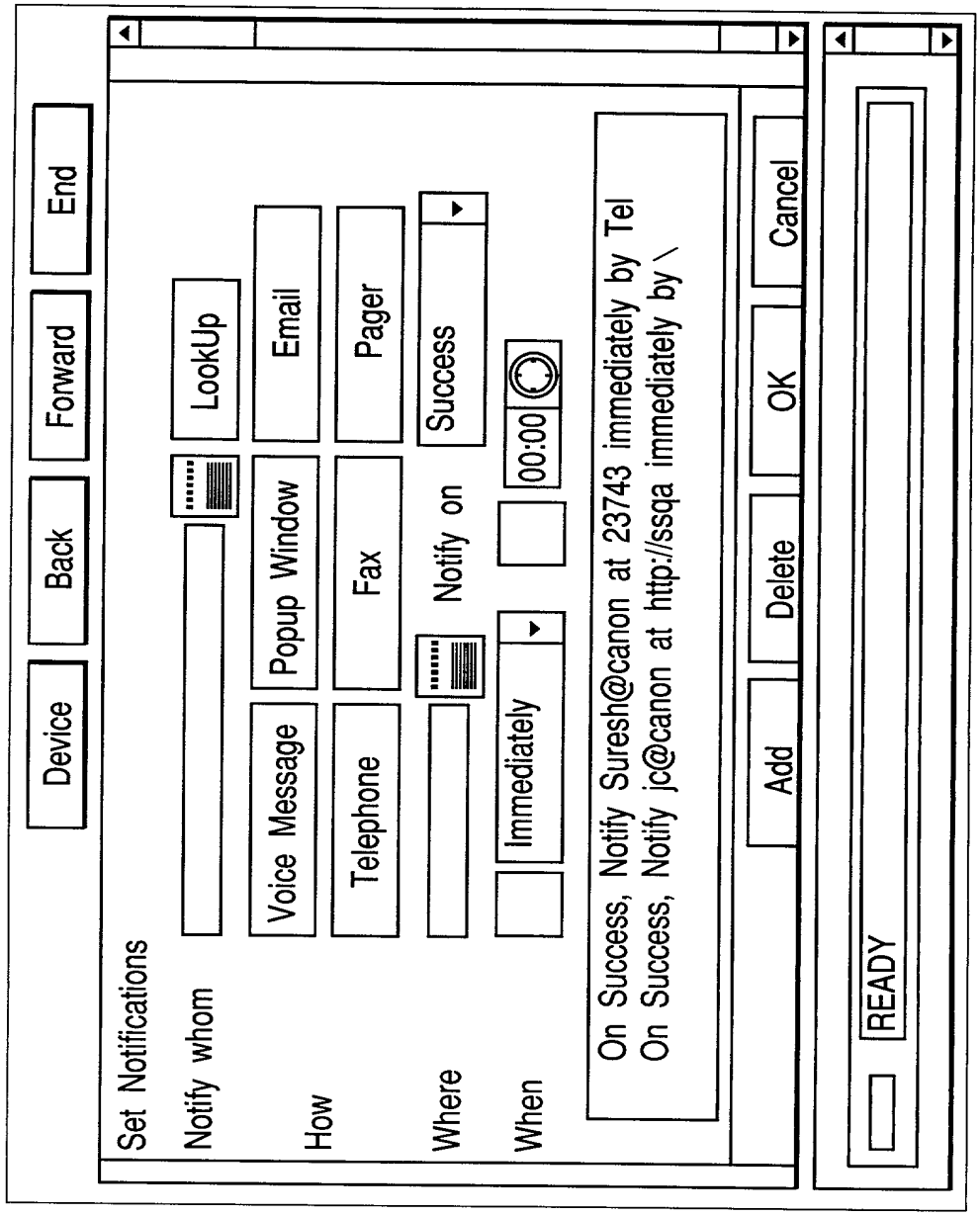

Device
Back
Forward
End
Set Notifications
Notify whom
LookUp
How
Voice Message
Popup Window
Email
Telephone
Fax
Pager
Where
Notify on
Success
When
Immediately
00:00
On Success, Notify Suresh@canon at 23743 immediately by Tel
On Success, Notify jc@canon at http://ssqa immediately by \
Add
Delete
OK
Cancel
READY

FIG. 119

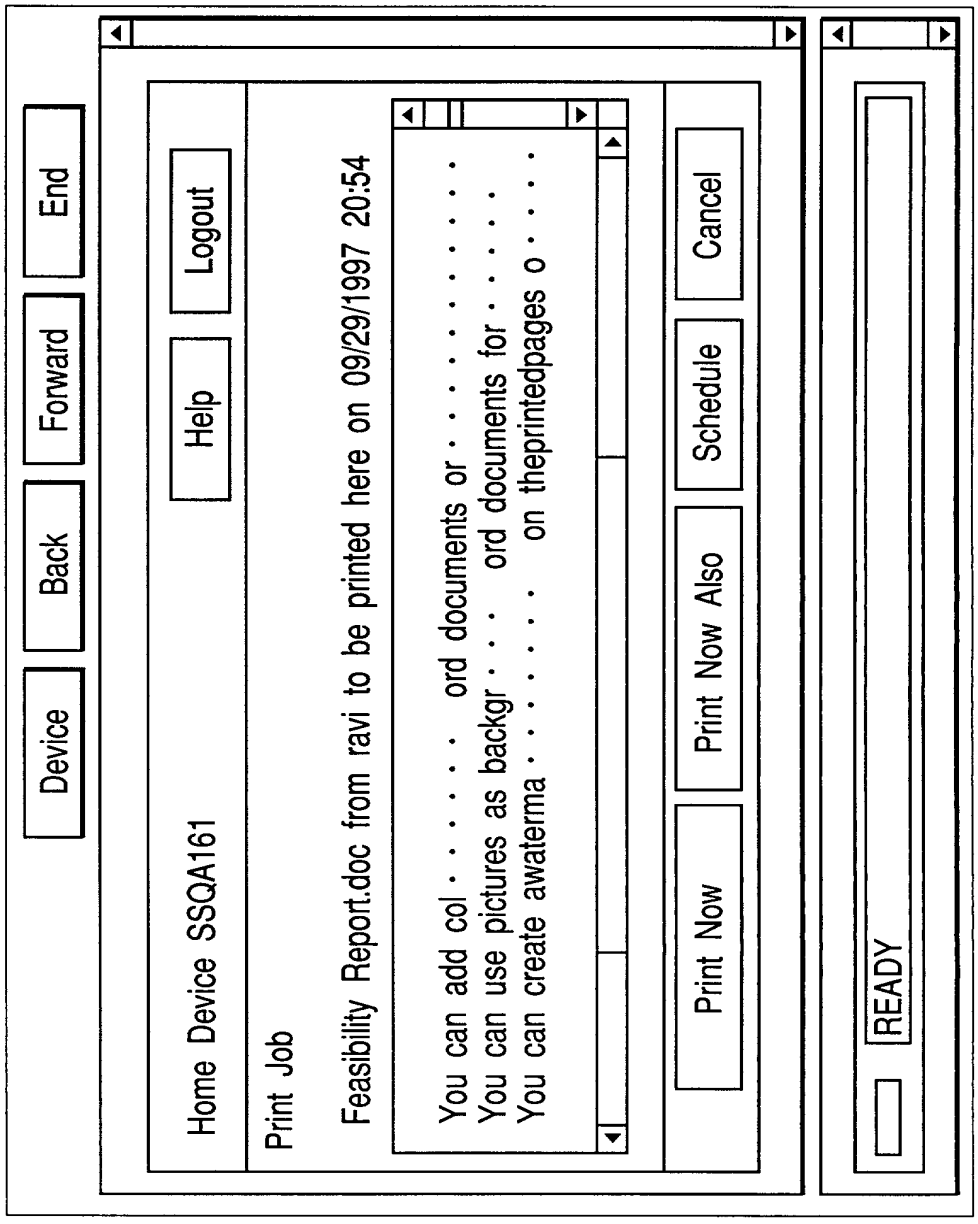

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Print Job
Feasibility Report.doc from ravi to be printed here on 09/29/1997 20:54
You can add col . . . . . ord documents or . . . . . .
You can use pictures as backgr . . . ord documents for . . . . .
You can create awaterma . . . . . on theprintedpages o . . . .
Print Now
Print Now Also
Schedule
Cancel
READY

FIG. 120

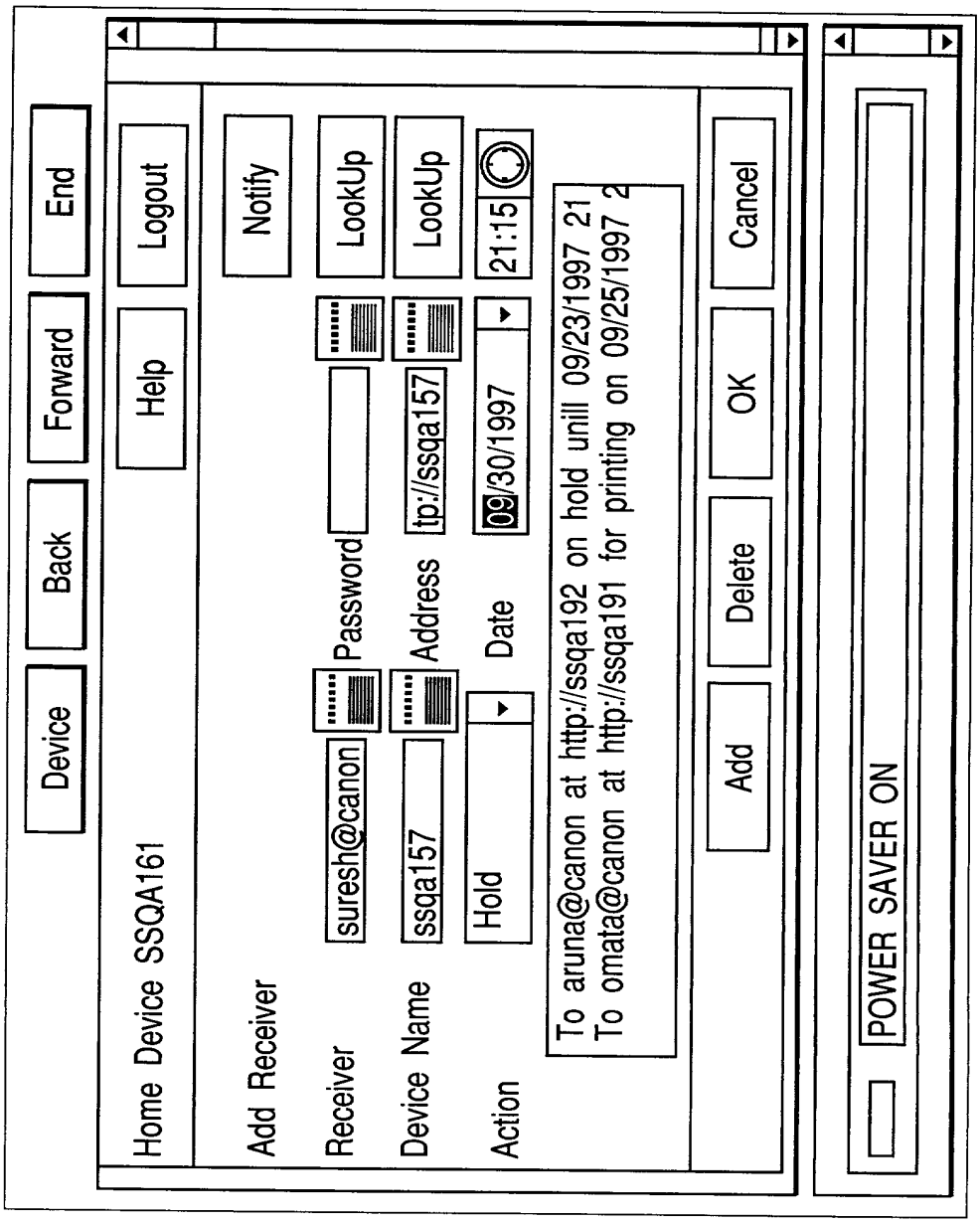

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Add Receiver
Notify
Receiver
suresh@canon
Password
LookUp
Device Name
ssqa157
Address
ftp://ssqa157
LookUp
Action
Hold
Date
09/30/1997
21:15
To aruna@canon at http://ssqa192 on hold unill 09/23/1997 21
To omata@canon at http://ssqa191 for printing on 09/25/1997 2
Add
Delete
OK
Cancel
POWER SAVER ON

FIG. 121

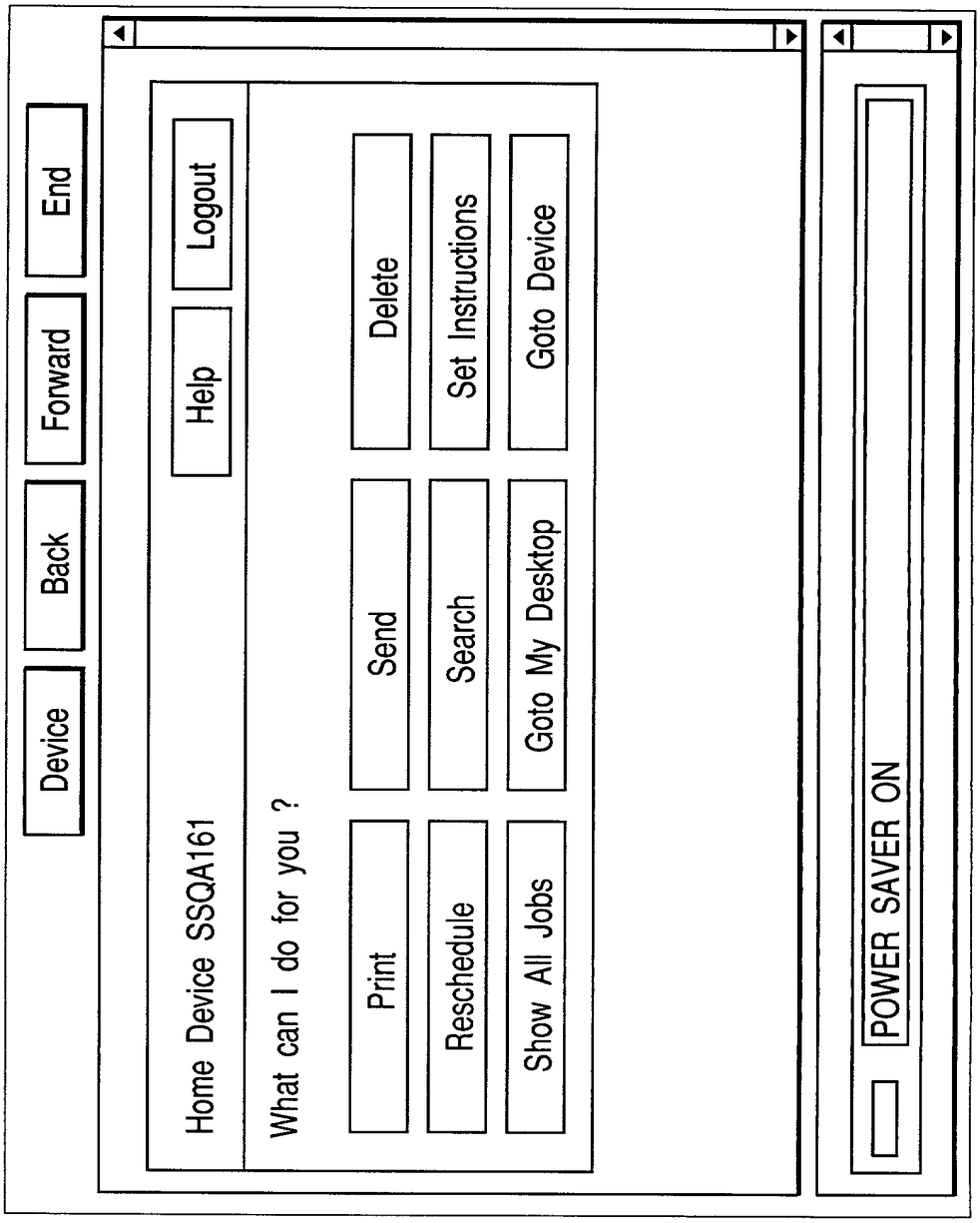

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
What can I do for you ?
Print
Send
Delete
Reschedule
Search
Set Instructions
Show All Jobs
Goto My Desktop
Goto Device
POWER SAVER ON

FIG. 122

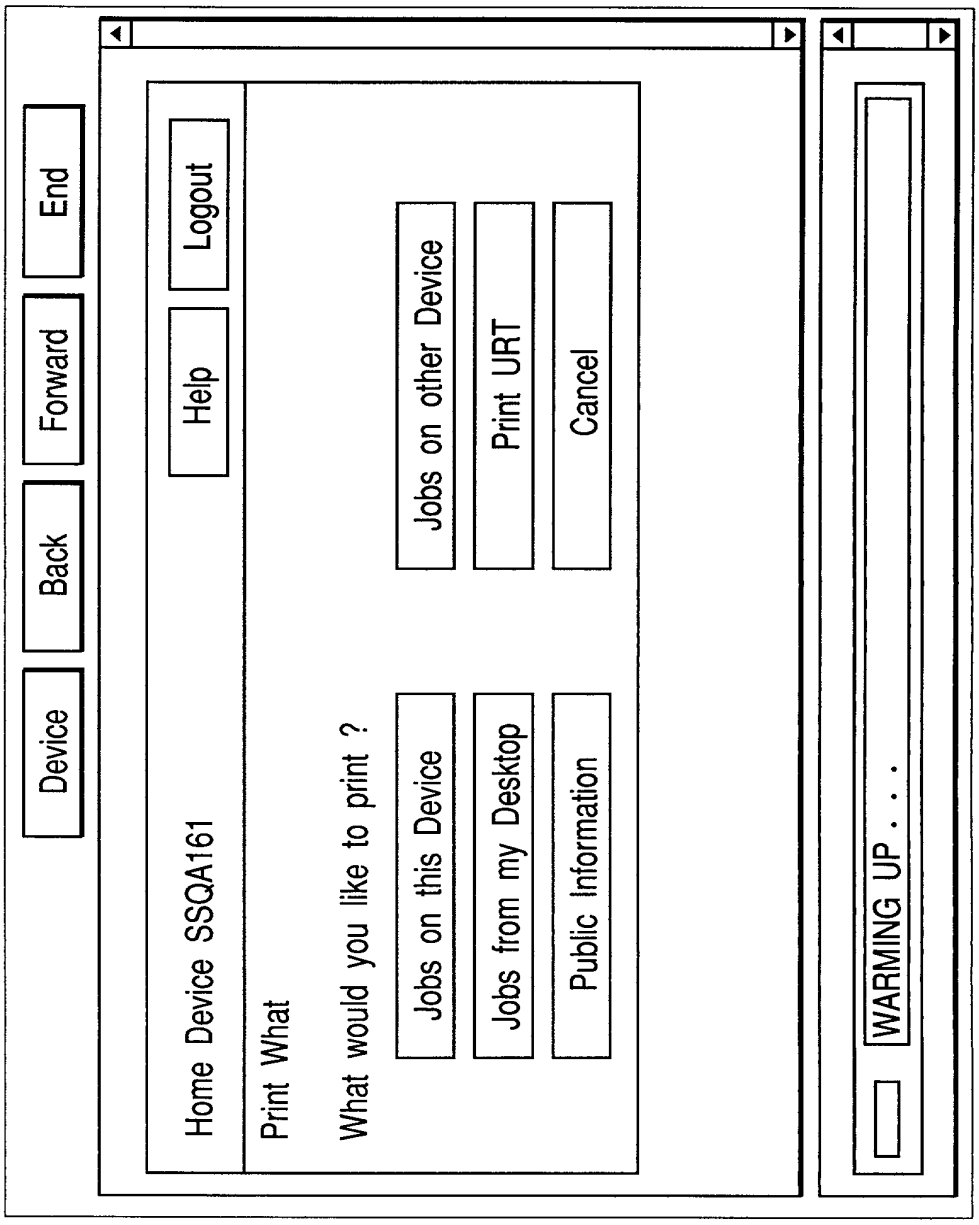

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Print What
What would you like to print ?
Jobs on this Device
Jobs from my Desktop
Public Information
Jobs on other Device
Print URT
Cancel
WARMING UP . . .

FIG. 123

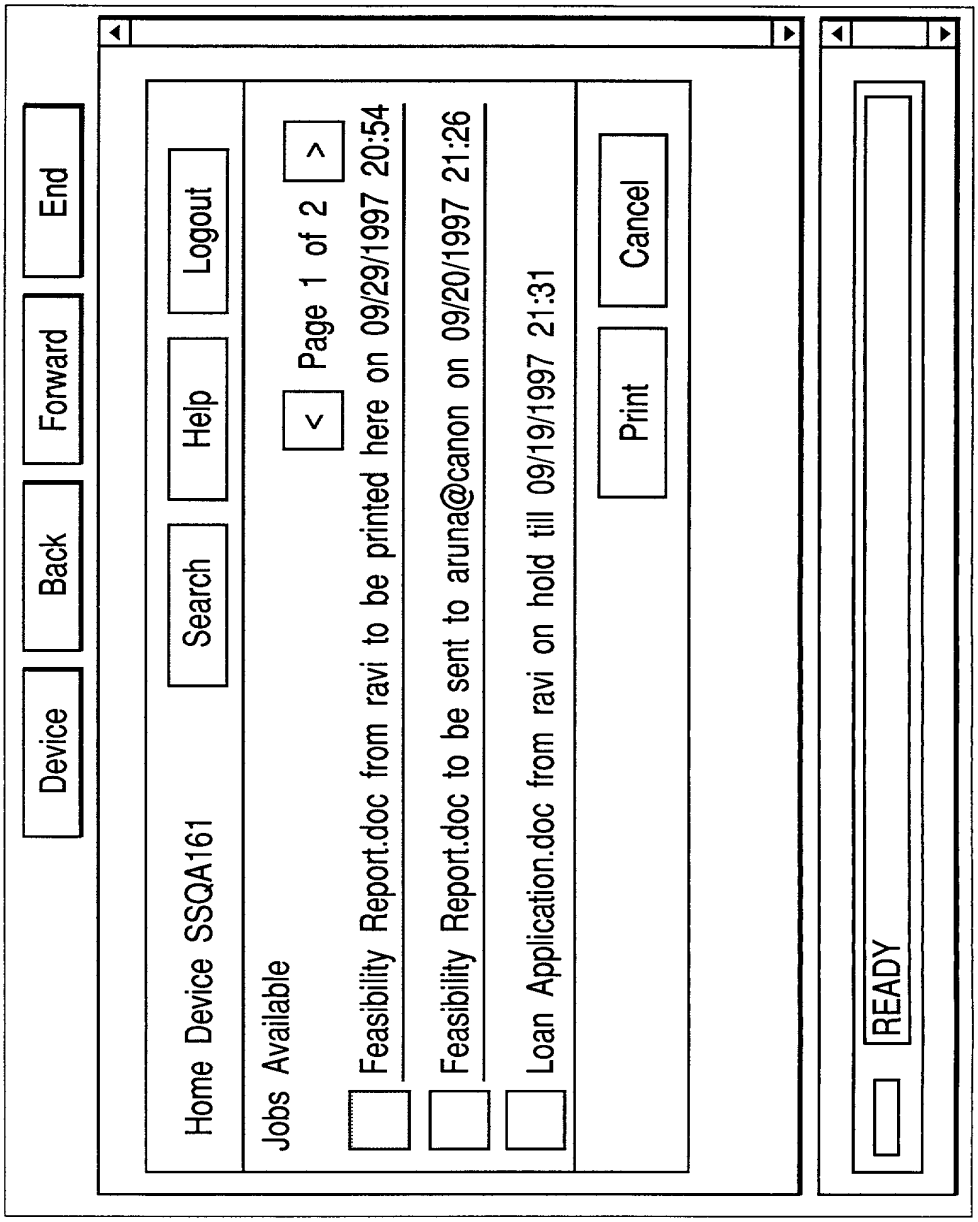

Device
Back
Forward
End
Home Device SSQA161
Search
Help
Logout
Jobs Available
< Page 1 of 2 >
Feasibility Report.doc from ravi to be printed here on 09/29/1997 20:54
Feasibility Report.doc to be sent to aruna@canon on 09/20/1997 21:26
Loan Application.doc from ravi on hold till 09/19/1997 21:31
Print
Cancel
READY

FIG. 124

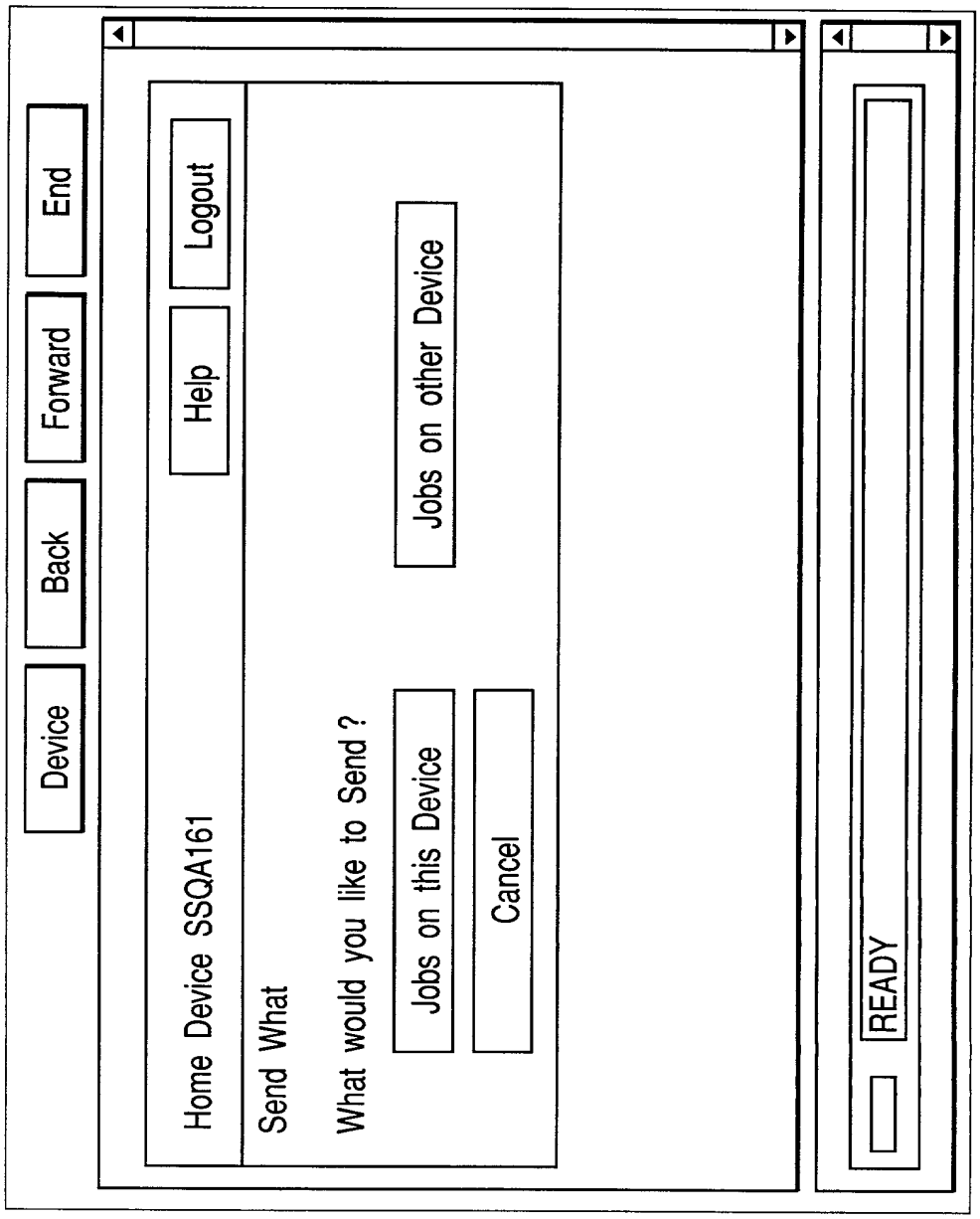
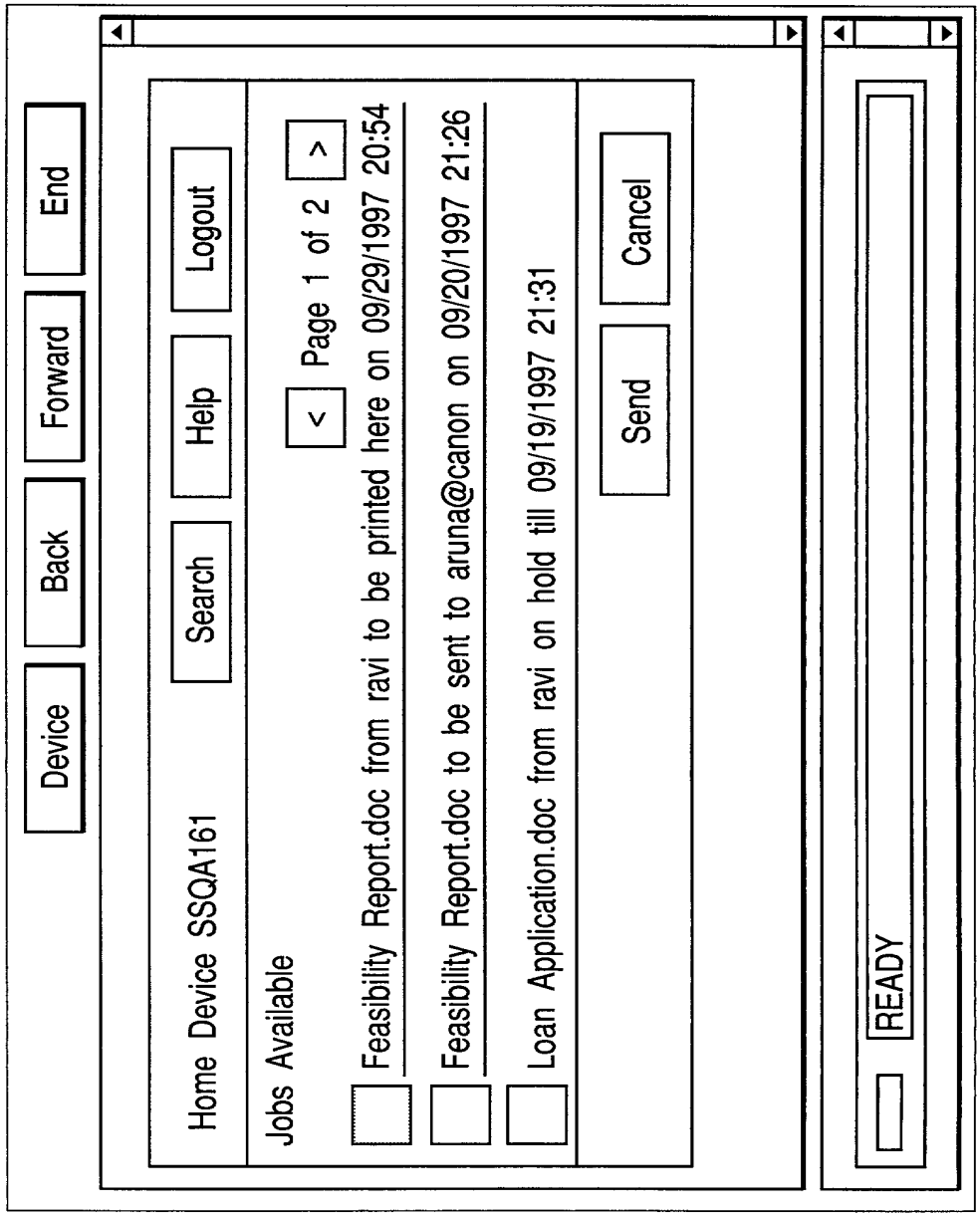
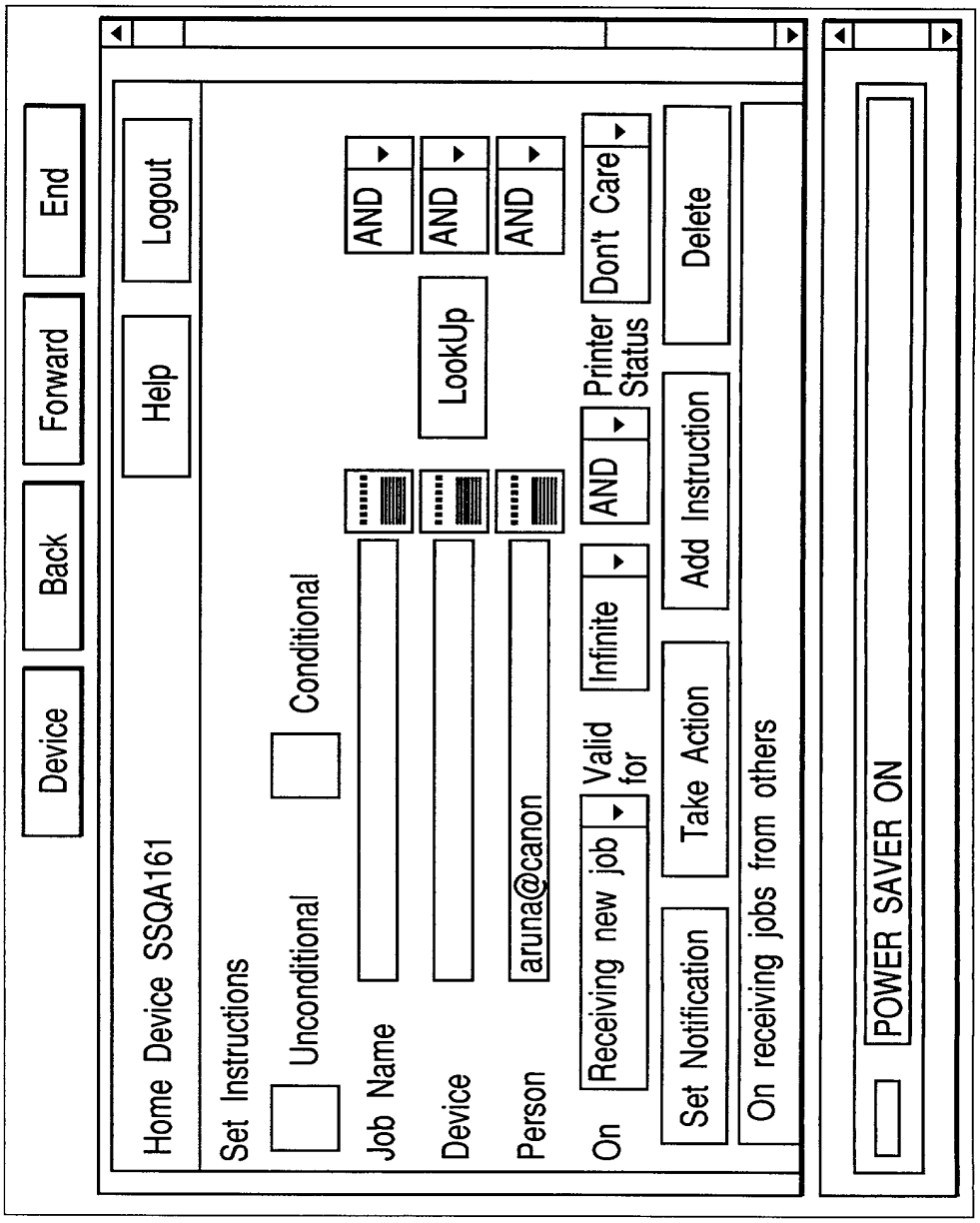

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Send What
What would you like to Send ?
Jobs on this Device
Jobs on other Device
Cancel
READY

FIG. 125


Device
Back
Forward
End
Home Device SSQA161
Search
Help
Logout
Jobs Available
< Page 1 of 2 >
Feasibility Report.doc from ravi to be printed here on 09/29/1997 20:54
Feasibility Report.doc to be sent to aruna@canon on 09/20/1997 21:26
Loan Application.doc from ravi on hold till 09/19/1997 21:31
Send
Cancel
READY

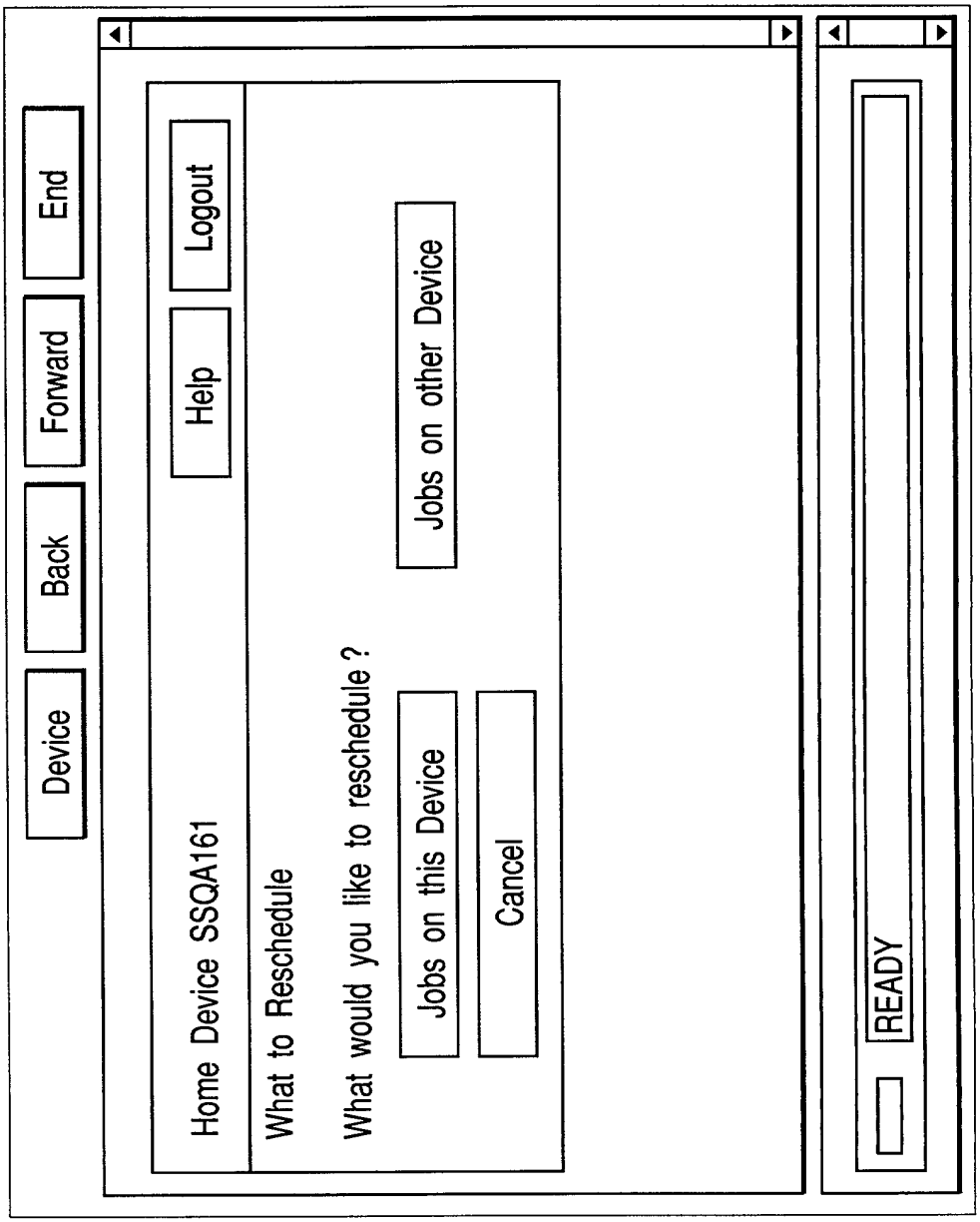
6614DE 6650A1 90

FIG. 126



WO 2004/059560 PCT/US2003/041160

FIG. 127



attorney docket

FIG. 128

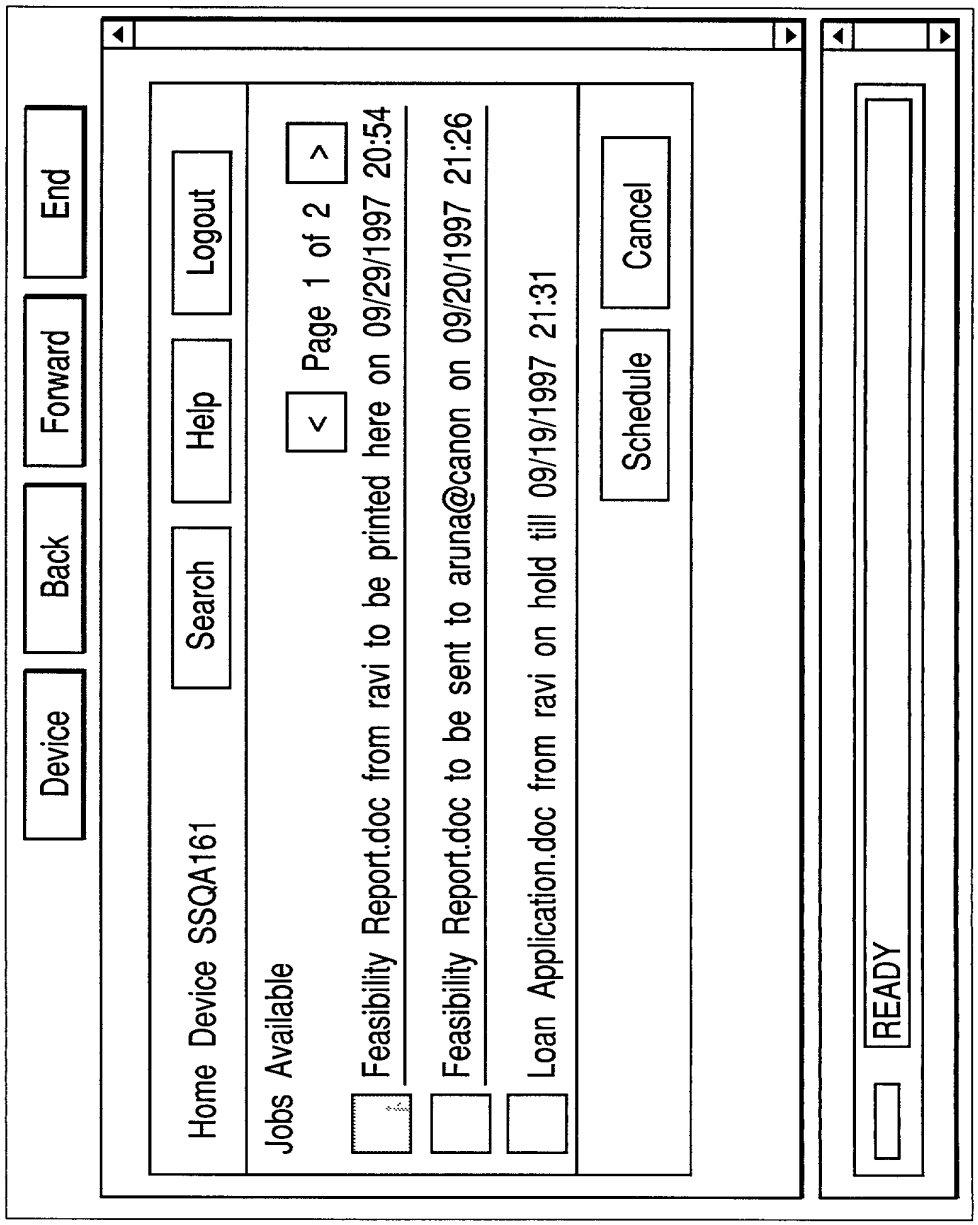
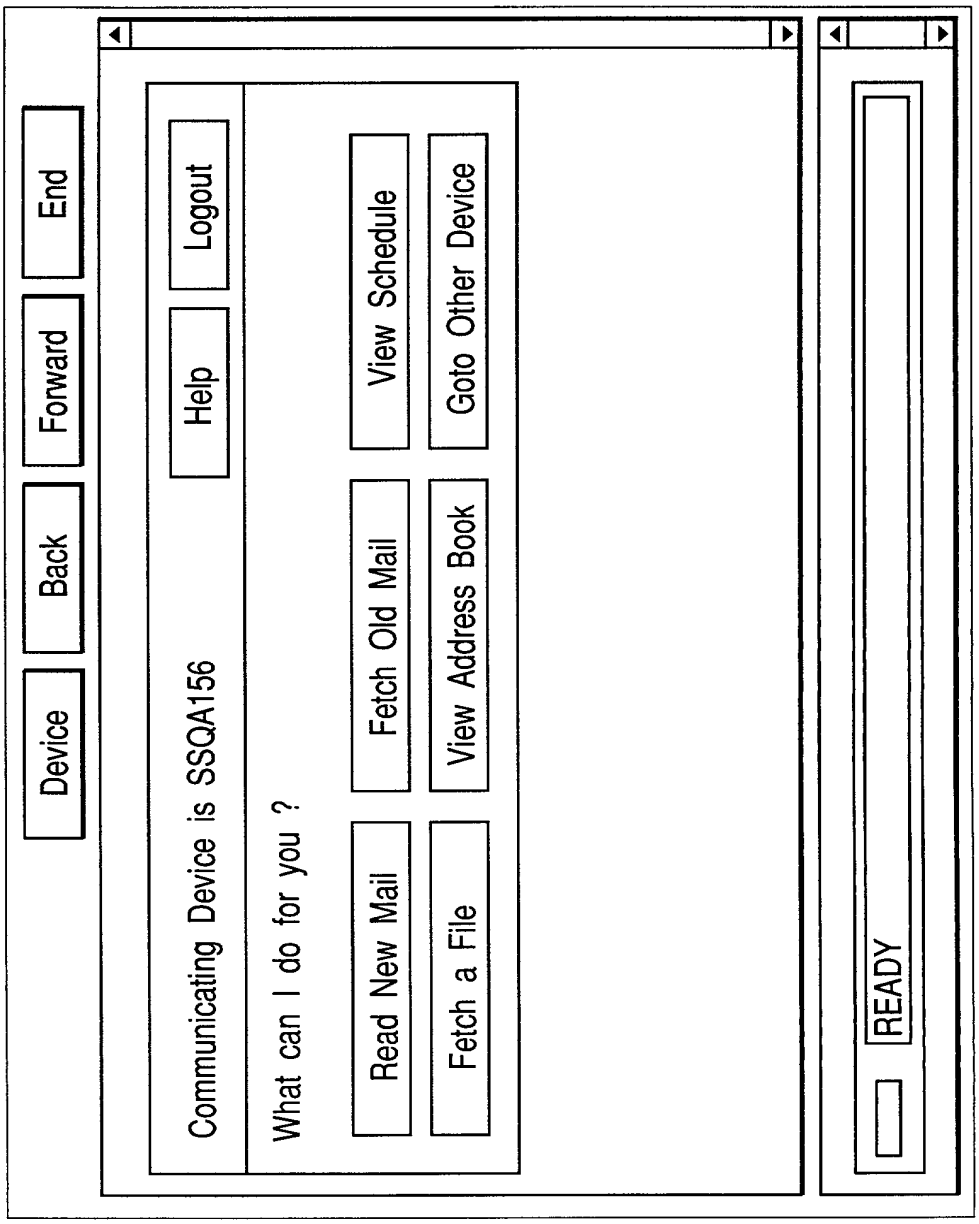


FIG. 129


Device
Back
Forward
End
Communicating Device is SSQA156
Help
Logout
What can I do for you ?
Read New Mail
Fetch Old Mail
View Schedule
Fetch a File
View Address Book
Goto Other Device
READY

86-h-07: 9590/160

FIG. 130

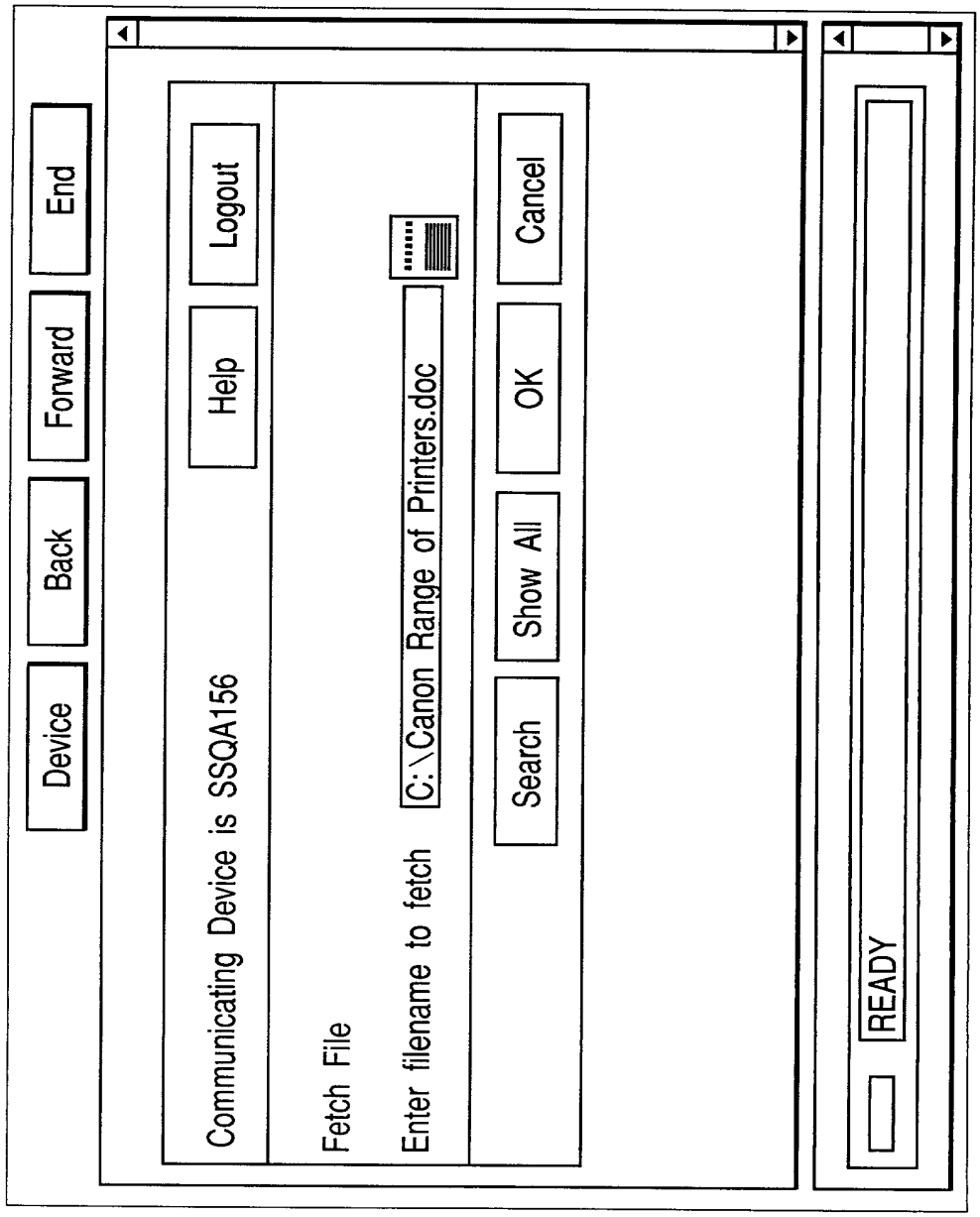


FIG. 131

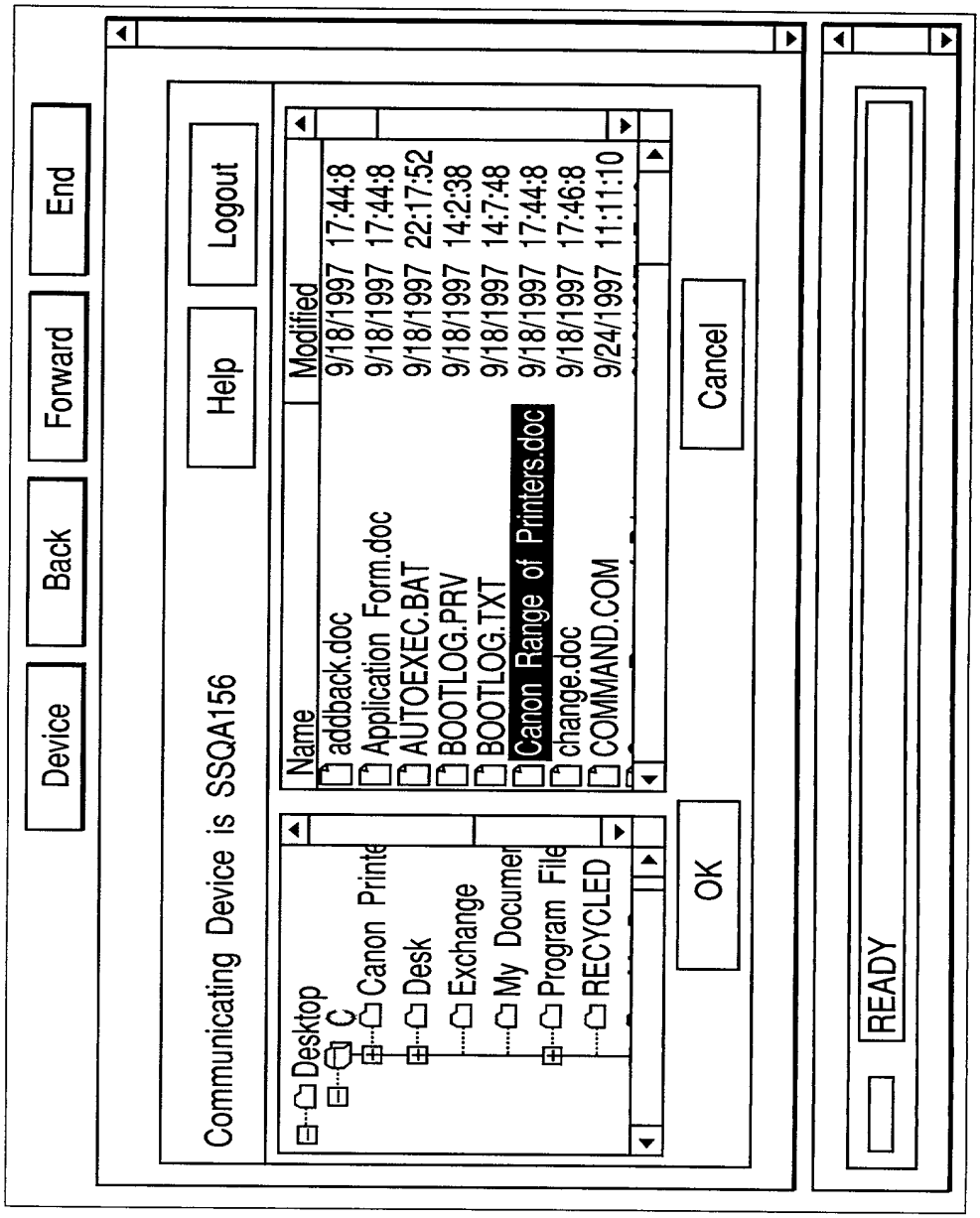

Device
Back
Forward
End
Communicating Device is SSQA156
Help
Logout
Desktop
Canon Printe
Desk
Exchange
My Documer
Program File
RECYCLED
Name
Modified
addback.doc 9/18/1997 17:44:8
Application Form.doc 9/18/1997 17:44:8
AUTOEXEC.BAT 9/18/1997 22:17:52
BOOTLOG.PRV 9/18/1997 14:2:38
BOOTLOG.TXT 9/18/1997 14:7:48
Canon Range of Printers.doc 9/18/1997 17:44:8
change.doc 9/18/1997 17:46:8
COMMAND.COM 9/24/1997 11:11:10
OK
Cancel
READY

FIG. 132

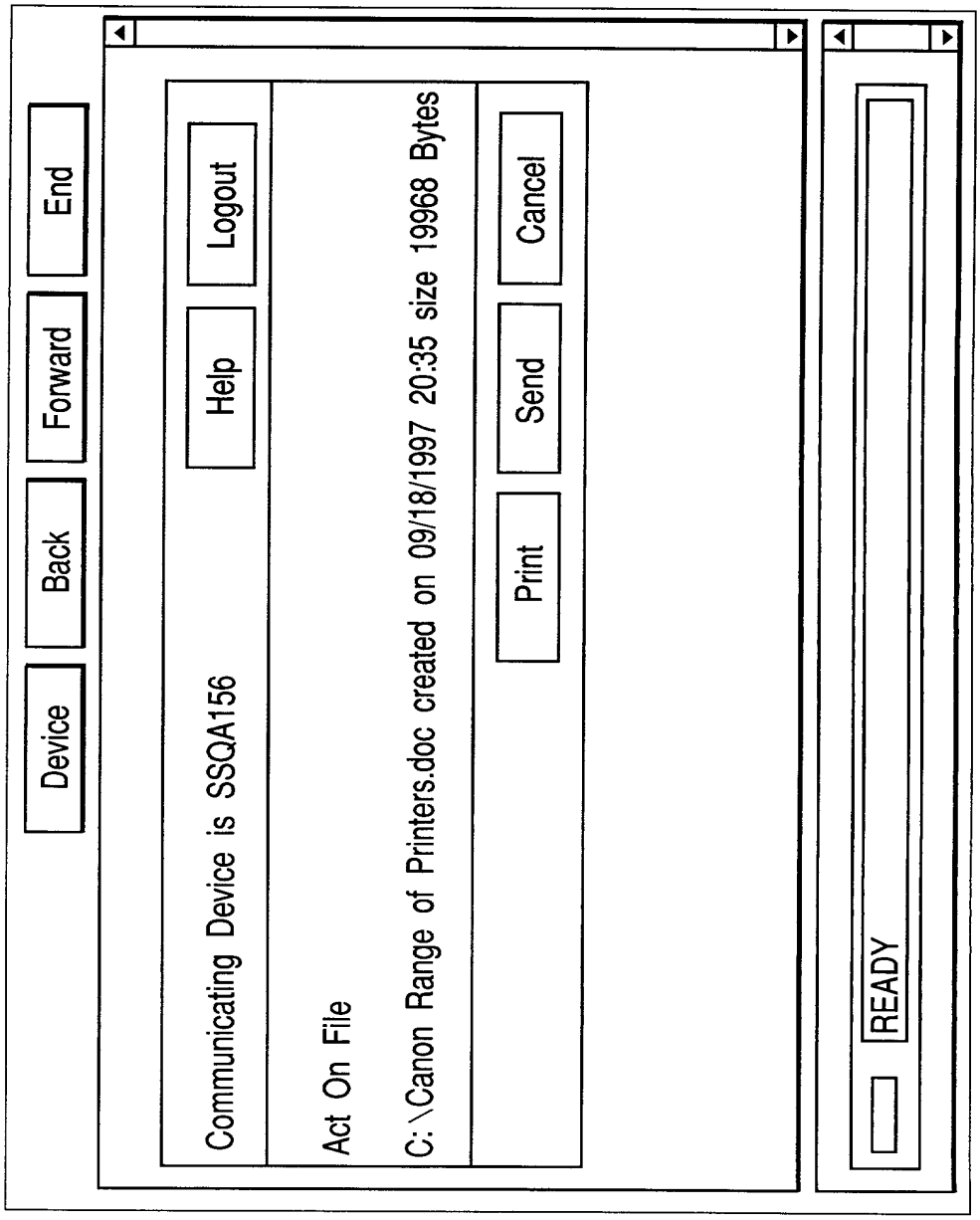

Device
Back
Forward
End
Communicating Device is SSQA156
Help
Logout
Act On File
C:\Canon Range of Printers.doc created on 09/18/1997 20:35 size 19968 Bytes
Print
Send
Cancel
READY

FIG. 133

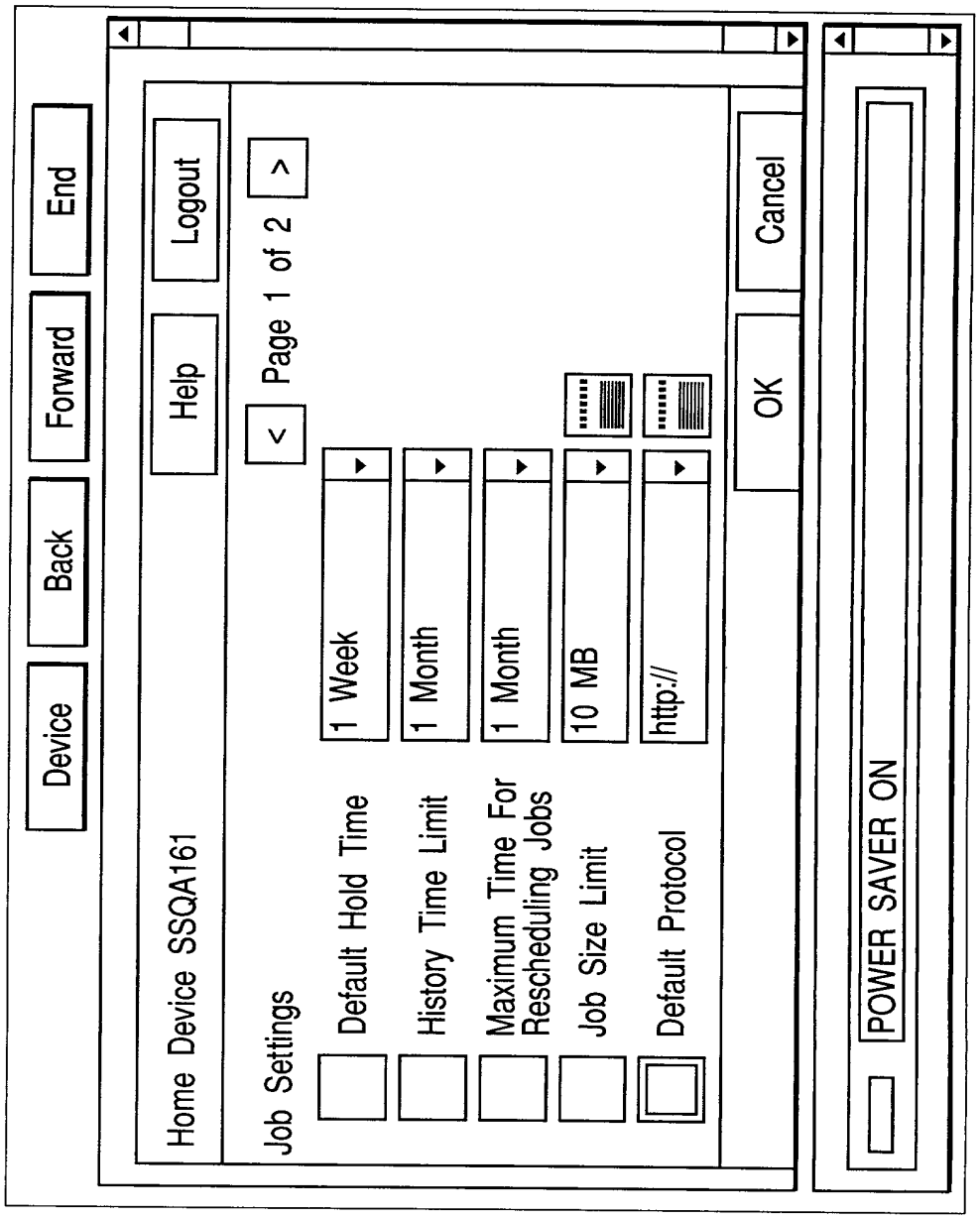

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Job Settings
< Page 1 of 2 >
Default Hold Time
1 Week
History Time Limit
1 Month
Maximum Time For Rescheduling Jobs
1 Month
Job Size Limit
10 MB
Default Protocol
http://
OK
Cancel
POWER SAVER ON

FIG. 134

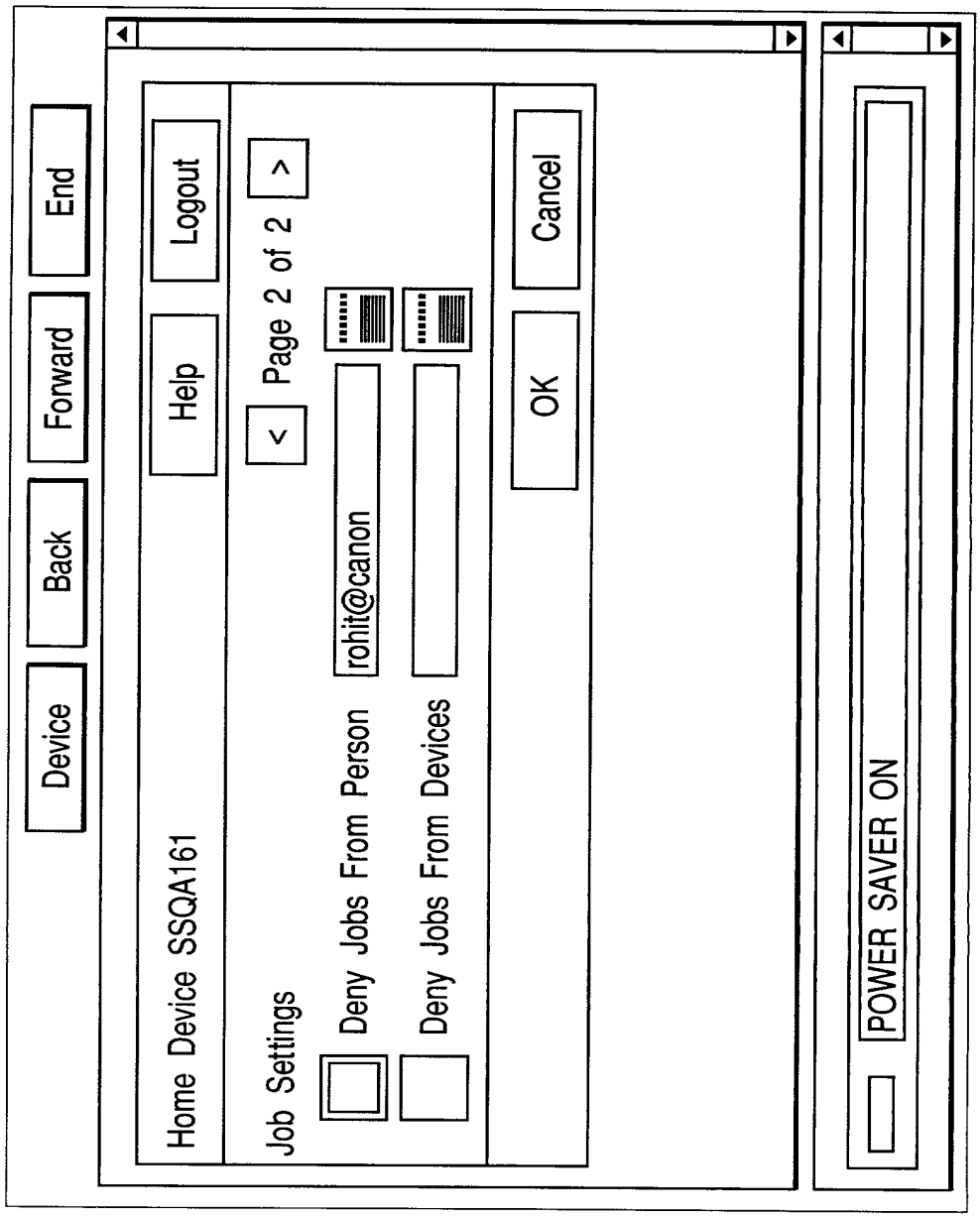

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Job Settings
< Page 2 of 2 >
Deny Jobs From Person
rohit@canon
Deny Jobs From Devices
OK
Cancel
POWER SAVER ON

FIG. 135

EP 3 654 169 A1

JOB
Action
Type
Object
Content
Format
Size
Addition
Source
Object Count
To
From
By
Condition
Owner
Status
Created Time
Parent Job

FIG. 136

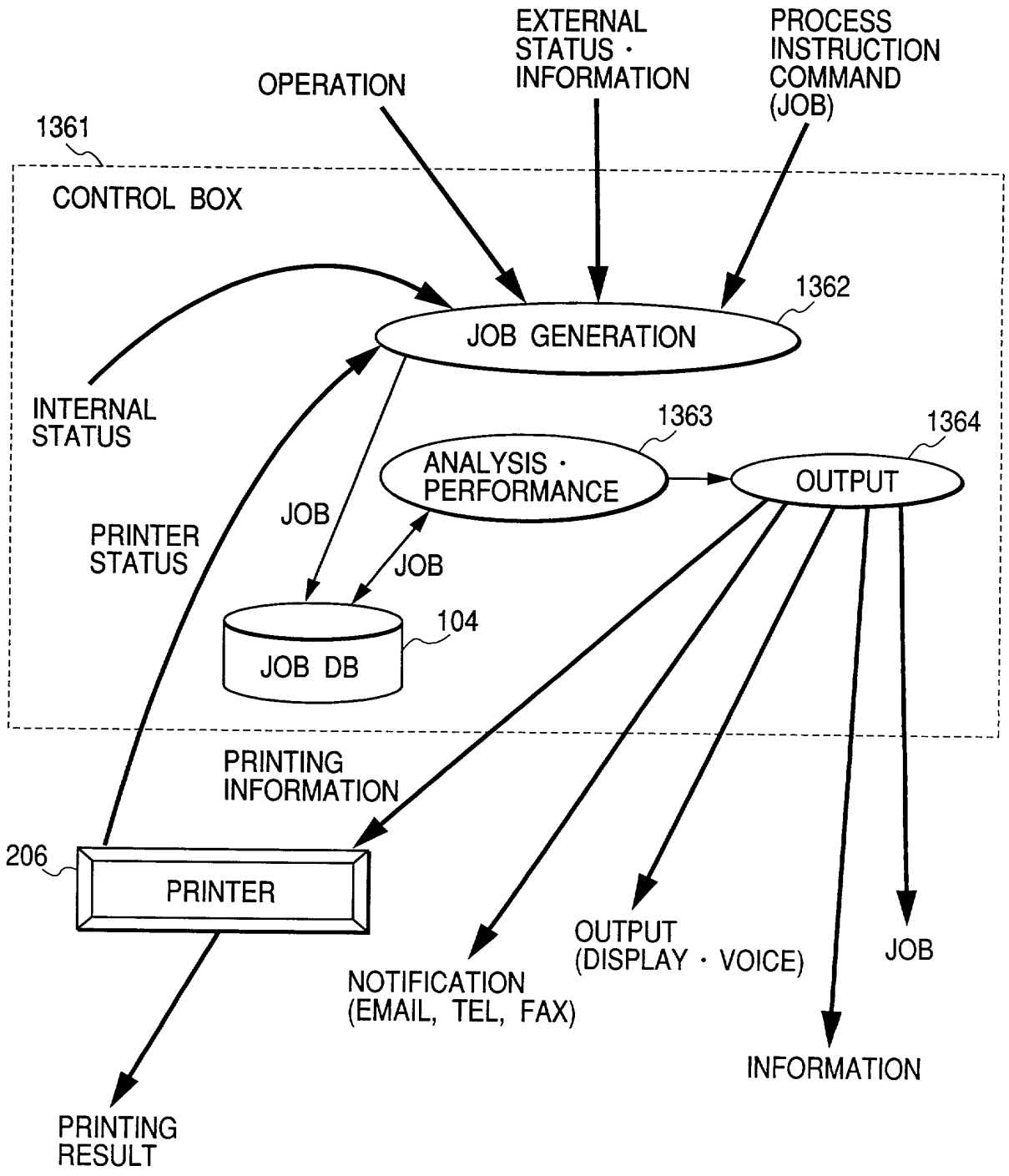

EXTERNAL STATUS · INFORMATION
PROCESS INSTRUCTION COMMAND (JOB)
OPERATION
1361
CONTROL BOX
1362
JOB GENERATION
INTERNAL STATUS
1363
ANALYSIS · PERFORMANCE
1364
OUTPUT
JOB
PRINTER STATUS
JOB
104
JOB DB
PRINTING INFORMATION
206
PRINTER
OUTPUT (DISPLAY · VOICE)
JOB
NOTIFICATION (EMAIL, TEL, FAX)
INFORMATION
PRINTING RESULT

FIG. 137A

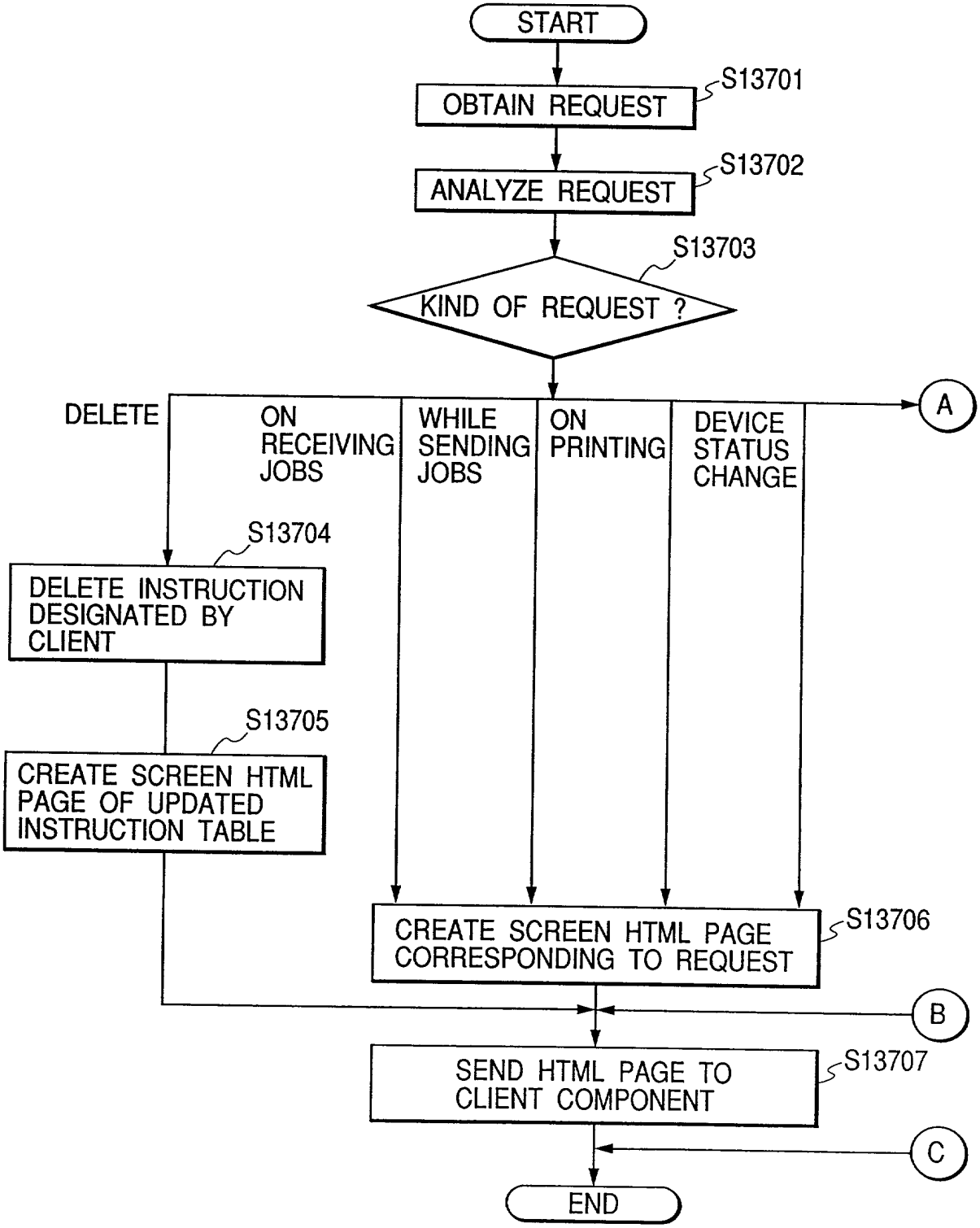

START
OBTAIN REQUEST
S13701
ANALYZE REQUEST
S13702
KIND OF REQUEST ?
S13703
DELETE
ON RECEIVING JOBS
WHILE SENDING JOBS
ON PRINTING
DEVICE STATUS CHANGE
A
S13704
DELETE INSTRUCTION DESIGNATED BY CLIENT
S13705
CREATE SCREEN HTML PAGE OF UPDATED INSTRUCTION TABLE
CREATE SCREEN HTML PAGE CORRESPONDING TO REQUEST
S13706
B
SEND HTML PAGE TO CLIENT COMPONENT
S13707
C
END

FIG. 137B

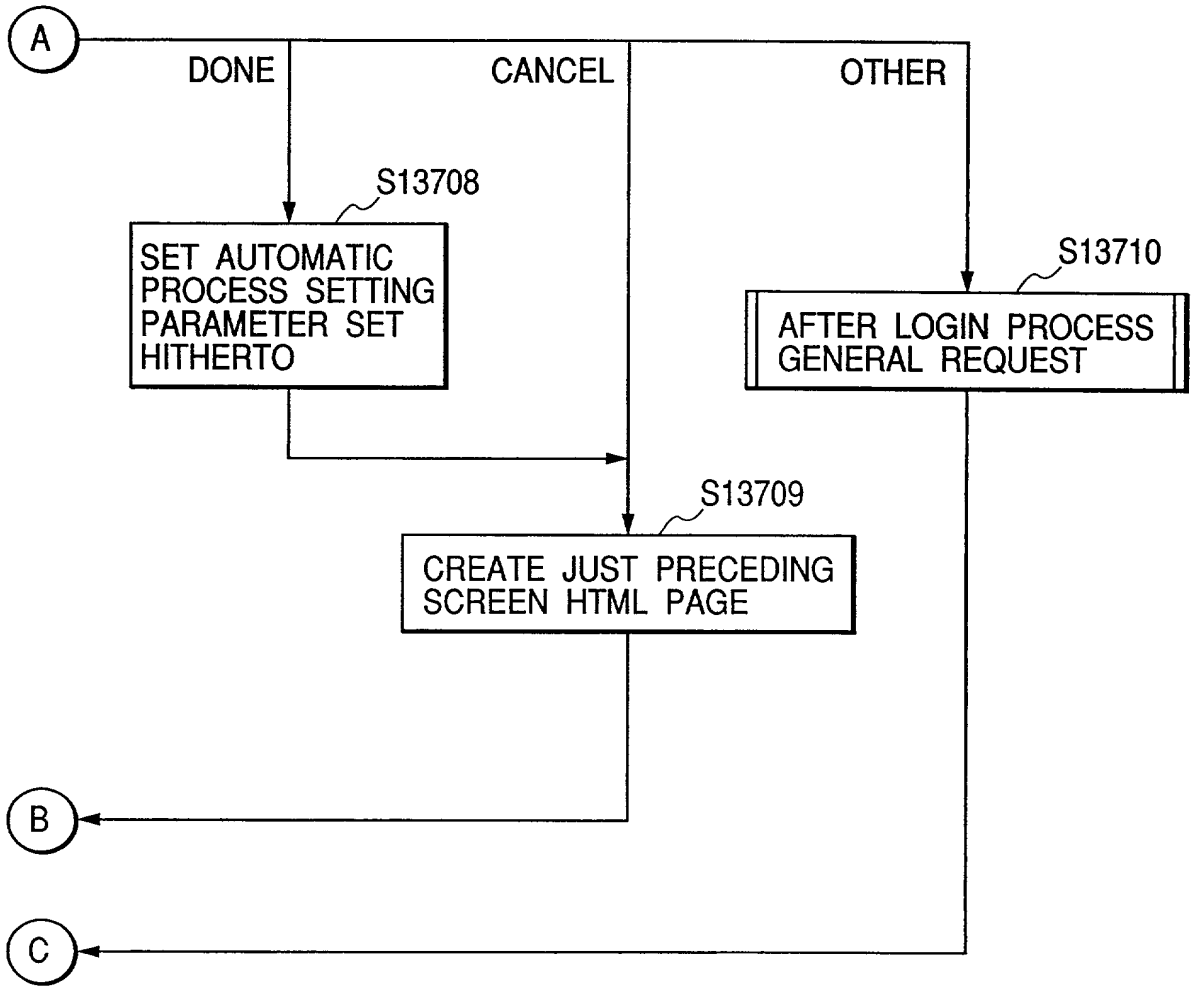

A
DONE
CANCEL
OTHER
S13708
SET AUTOMATIC PROCESS SETTING PARAMETER SET HITHERTO
S13710
AFTER LOGIN PROCESS GENERAL REQUEST
S13709
CREATE JUST PRECEDING SCREEN HTML PAGE
B
C

FIG. 138

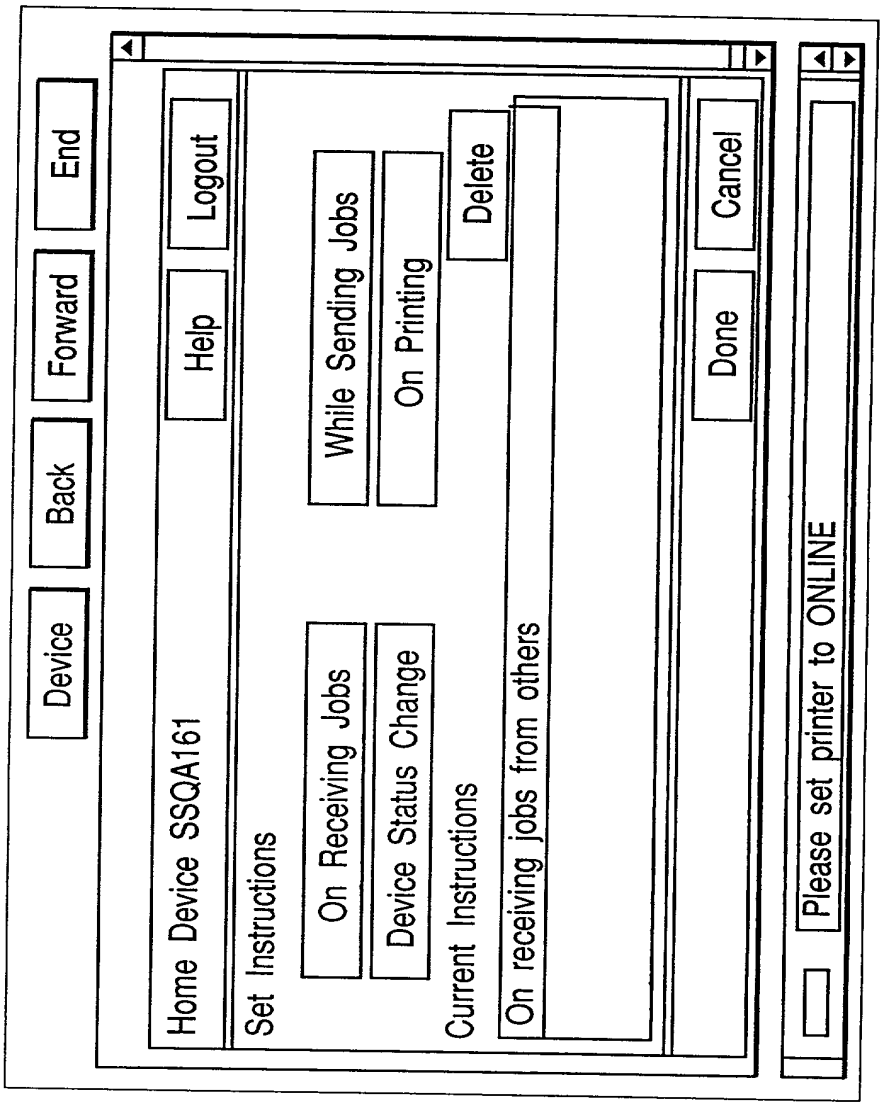

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Set Instructions
On Receiving Jobs
Device Status Change
While Sending Jobs
On Printing
Delete
Current Instructions
On receiving jobs from others
Done
Cancel
Please set printer to ONLINE

FIG. 139A

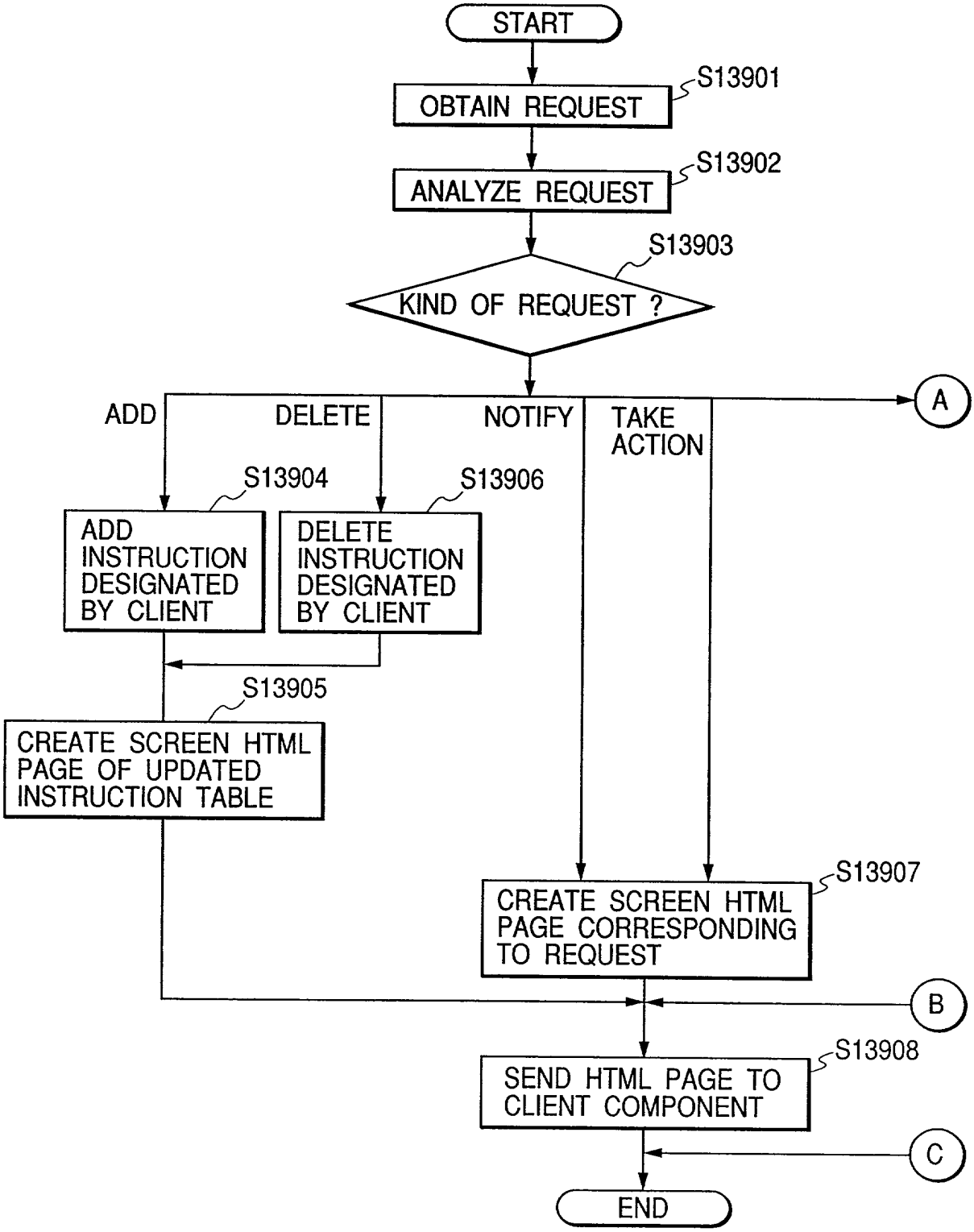

START
OBTAIN REQUEST
S13901
ANALYZE REQUEST
S13902
KIND OF REQUEST ?
S13903
ADD
DELETE
NOTIFY
TAKE ACTION
A
S13904
S13906
ADD INSTRUCTION DESIGNATED BY CLIENT
DELETE INSTRUCTION DESIGNATED BY CLIENT
S13905
CREATE SCREEN HTML PAGE OF UPDATED INSTRUCTION TABLE
S13907
CREATE SCREEN HTML PAGE CORRESPONDING TO REQUEST
B
S13908
SEND HTML PAGE TO CLIENT COMPONENT
C
END

FIG. 139B

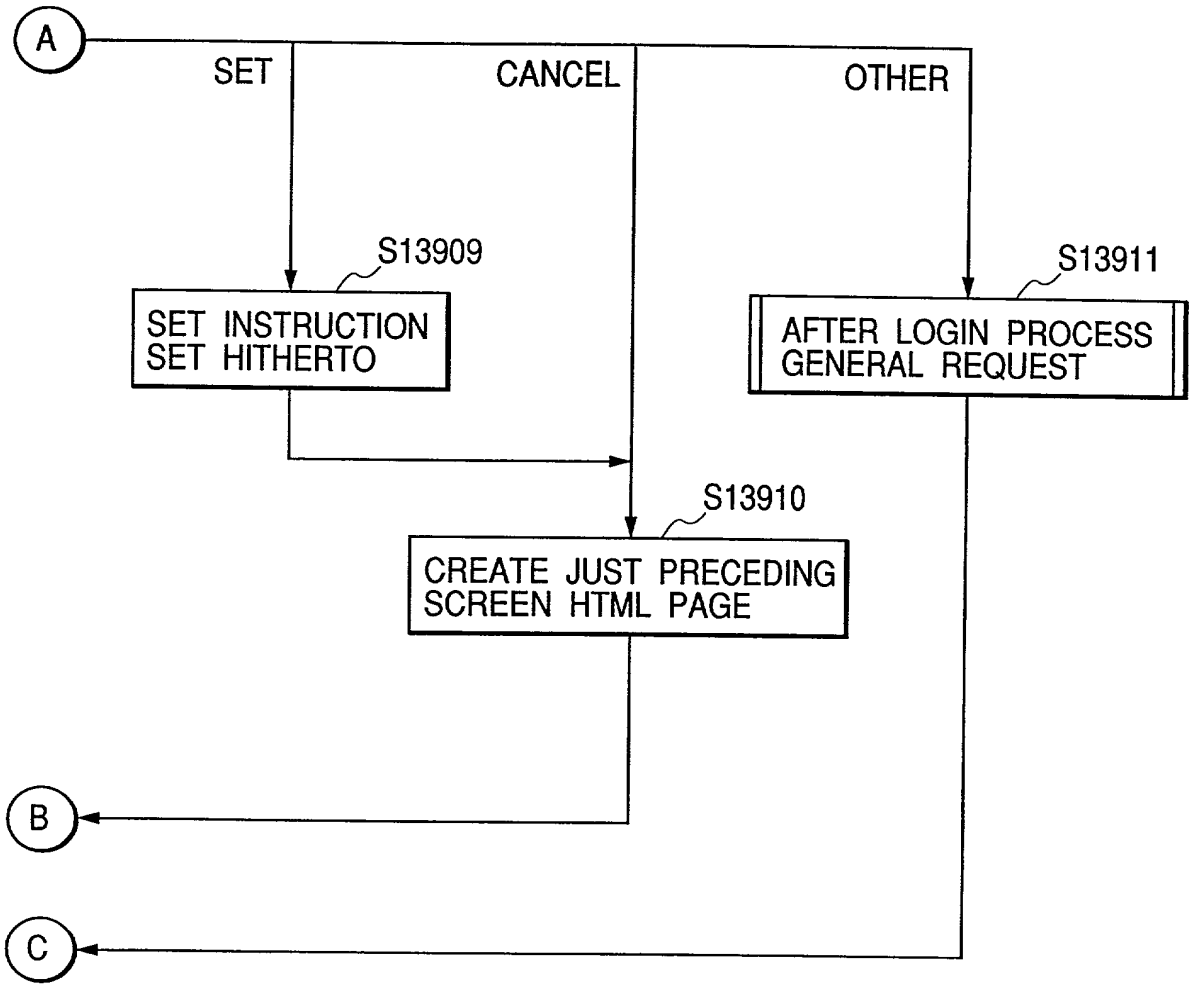

A
SET
CANCEL
OTHER
S13909
SET INSTRUCTION
SET HITHERTO
S13911
AFTER LOGIN PROCESS
GENERAL REQUEST
S13910
CREATE JUST PRECEDING
SCREEN HTML PAGE
B
C

FIG. 140

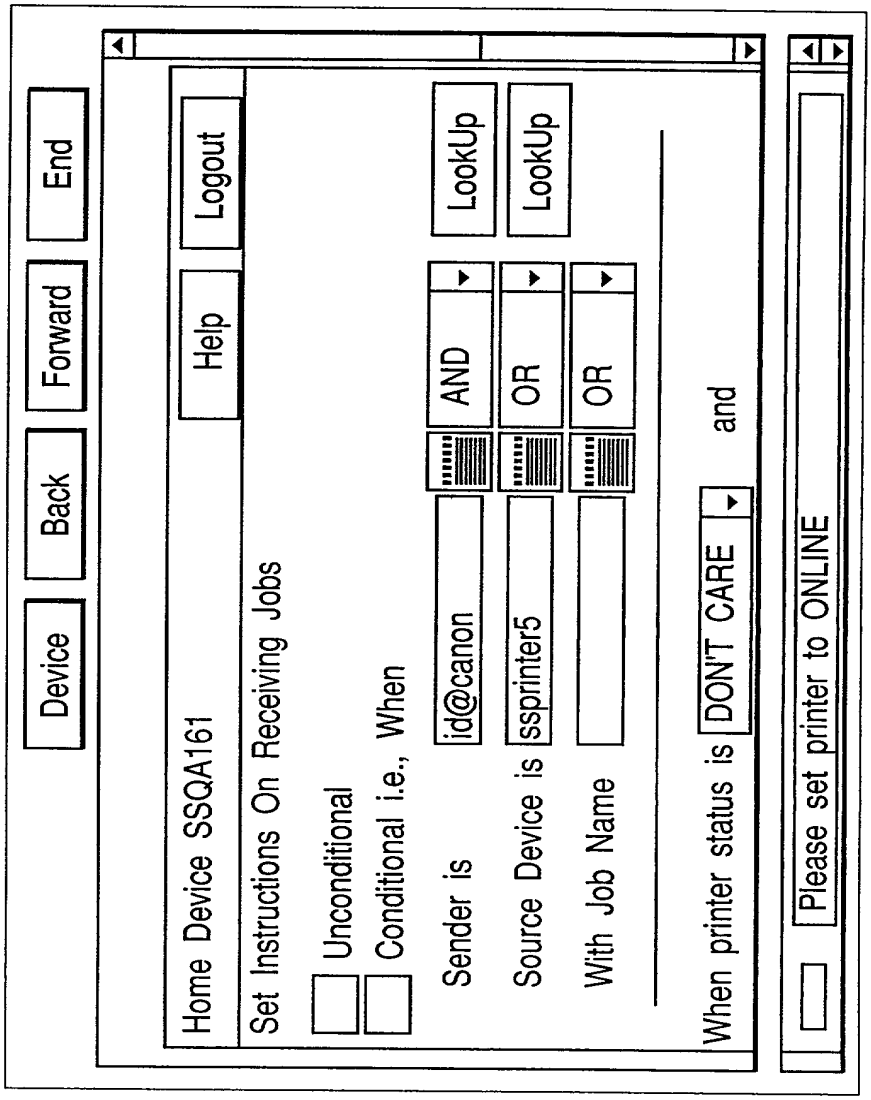

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Set Instructions On Receiving Jobs
Unconditional
Conditional i.e., When
Sender is
id@canon
AND
LookUp
Source Device is
ssprinter5
OR
LookUp
With Job Name
OR
When printer status is
DON'T CARE
and
Please set printer to ONLINE

FIG. 141

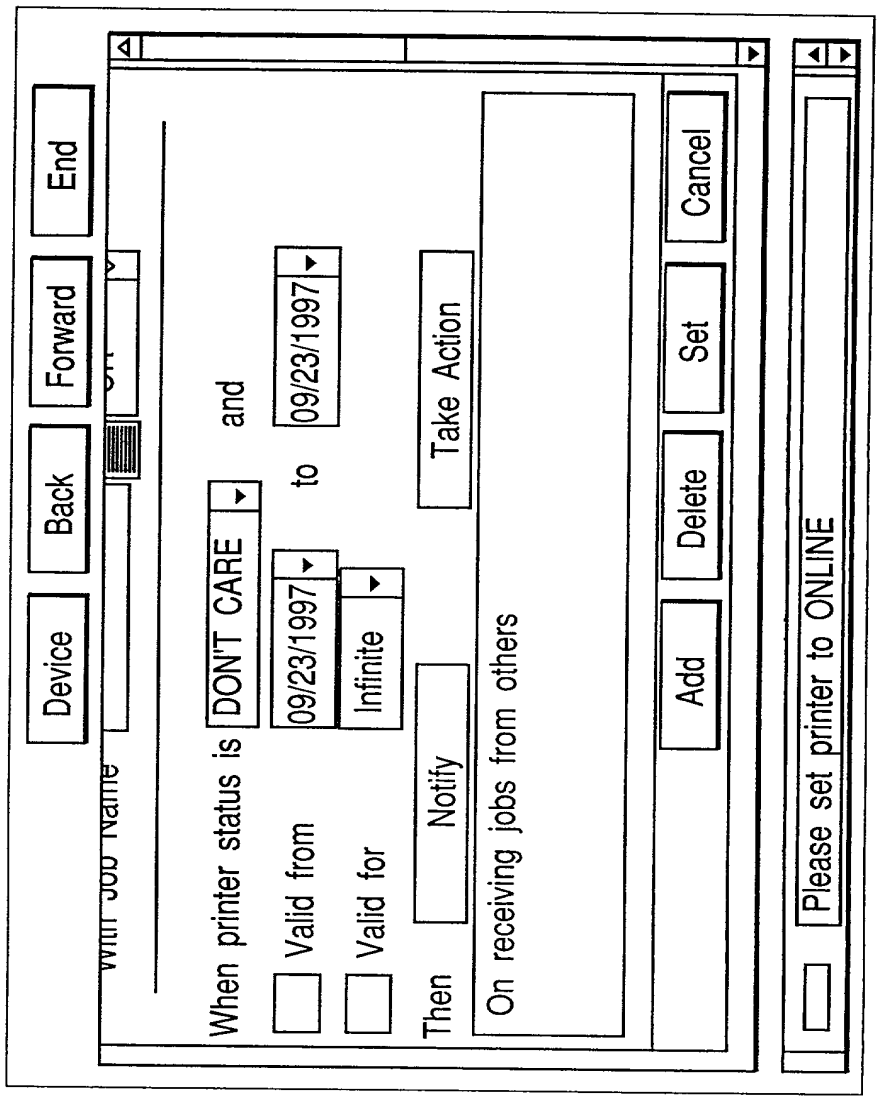

Device
Back
Forward
End
When printer status is
DON'T CARE
and
Valid from
09/23/1997
to
09/23/1997
Valid for
Infinite
Then
Notify
Take Action
On receiving jobs from others
Add
Delete
Set
Cancel
Please set printer to ONLINE

FIG. 137A

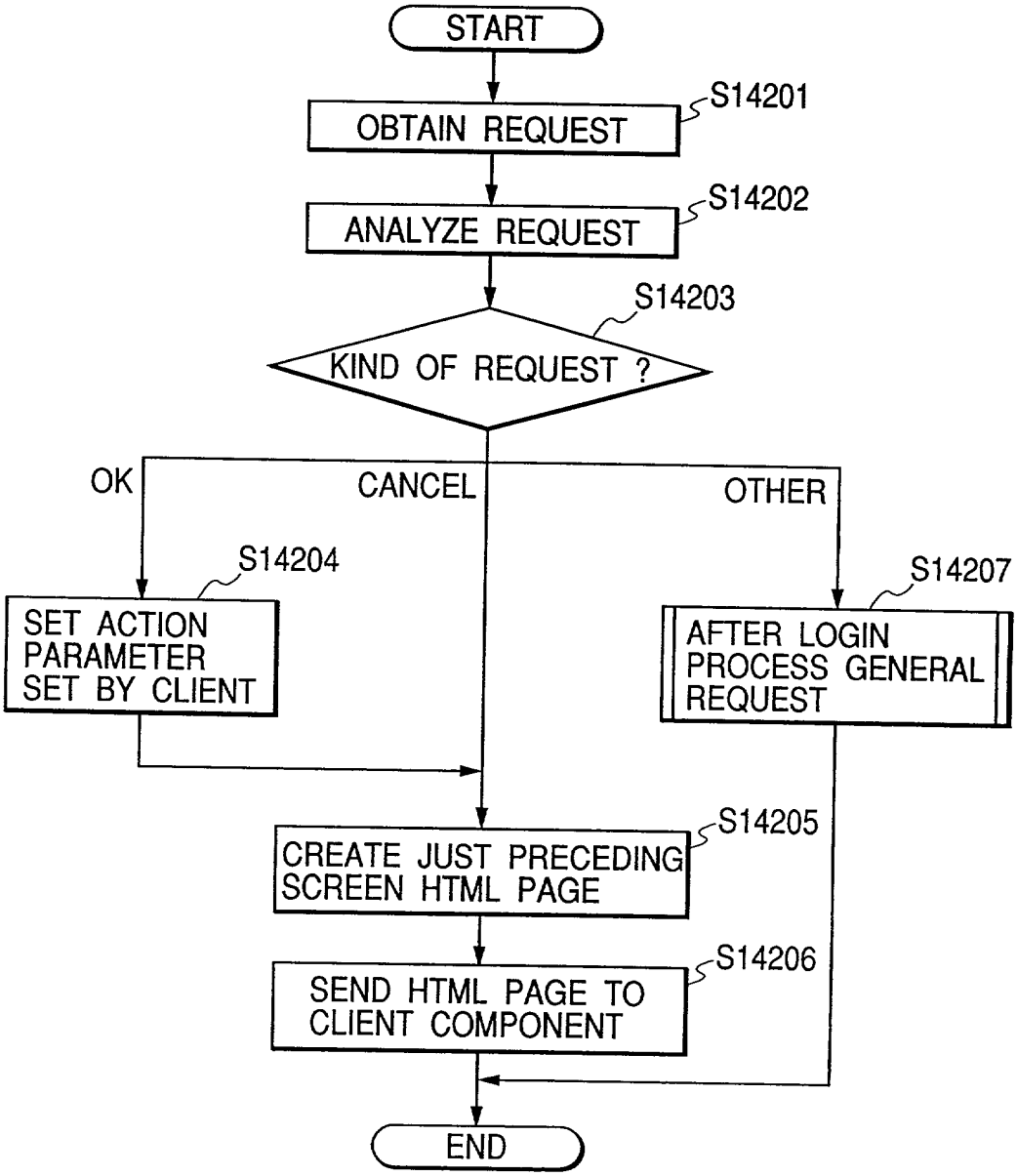

START
OBTAIN REQUEST
S14201
ANALYZE REQUEST
S14202
KIND OF REQUEST ?
S14203
OK
CANCEL
OTHER
S14204
SET ACTION PARAMETER SET BY CLIENT
S14207
AFTER LOGIN PROCESS GENERAL REQUEST
CREATE JUST PRECEDING SCREEN HTML PAGE
S14205
SEND HTML PAGE TO CLIENT COMPONENT
S14206
END

FIG. 143

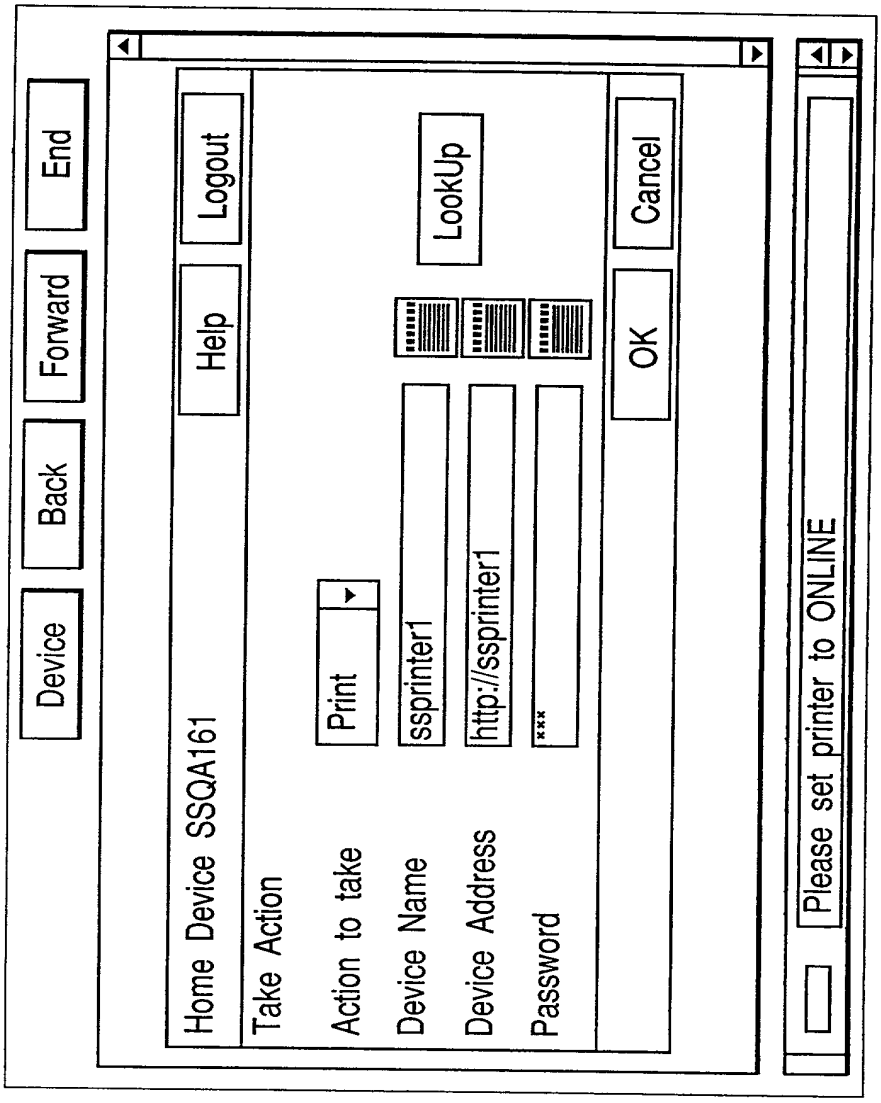

Device
Back
Forward
End
Home Device SSQA161
Help
Logout
Take Action
Action to take
Print
Device Name
ssprinter1
Device Address
http://ssprinter1
Password
***
LookUp
OK
Cancel
Please set printer to ONLINE

FIG. 144A

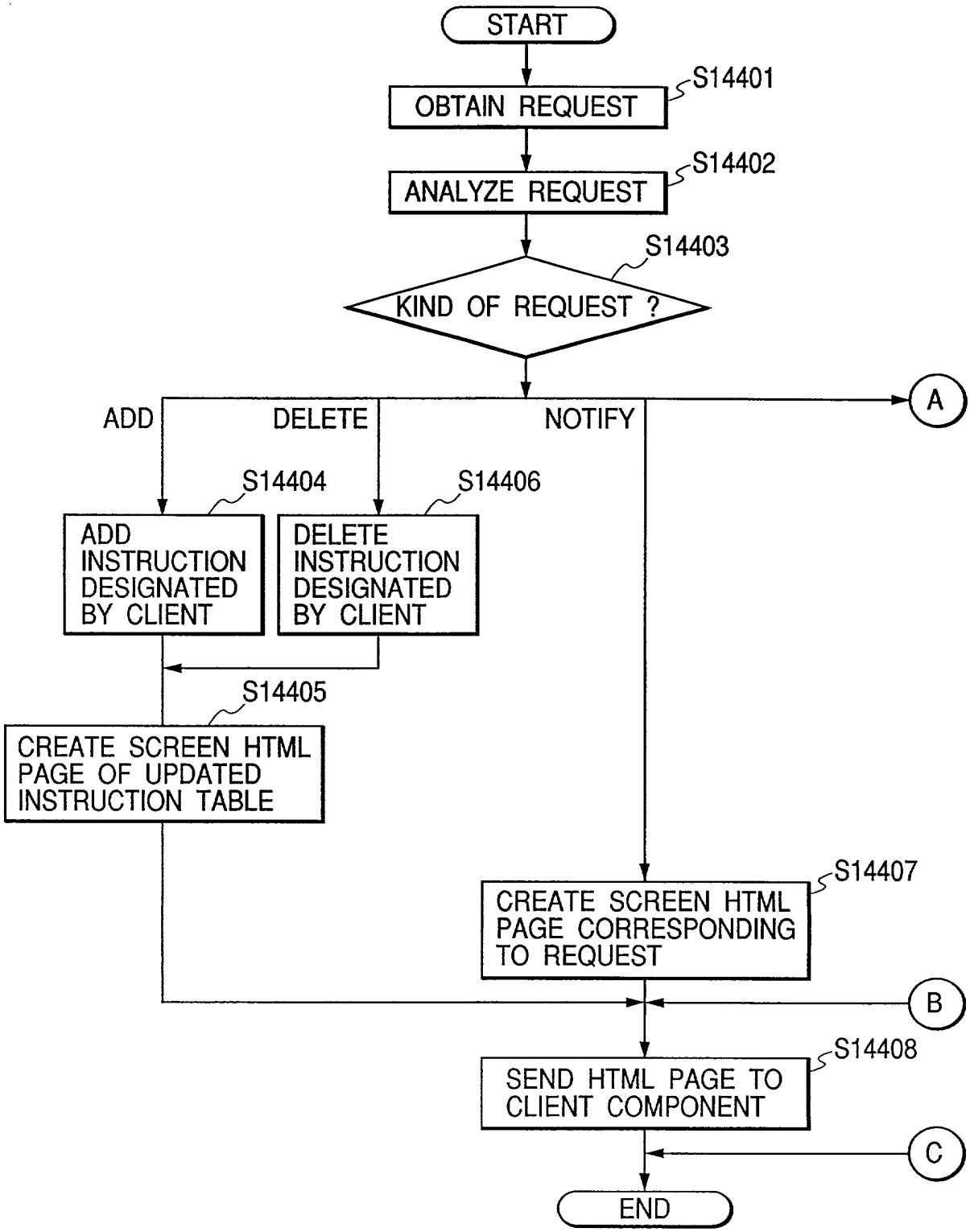

START
OBTAIN REQUEST
S14401
ANALYZE REQUEST
S14402
KIND OF REQUEST ?
S14403
ADD
DELETE
NOTIFY
A
S14404
S14406
ADD INSTRUCTION DESIGNATED BY CLIENT
DELETE INSTRUCTION DESIGNATED BY CLIENT
S14405
CREATE SCREEN HTML PAGE OF UPDATED INSTRUCTION TABLE
S14407
CREATE SCREEN HTML PAGE CORRESPONDING TO REQUEST
B
S14408
SEND HTML PAGE TO CLIENT COMPONENT
C
END

FIG. 144B

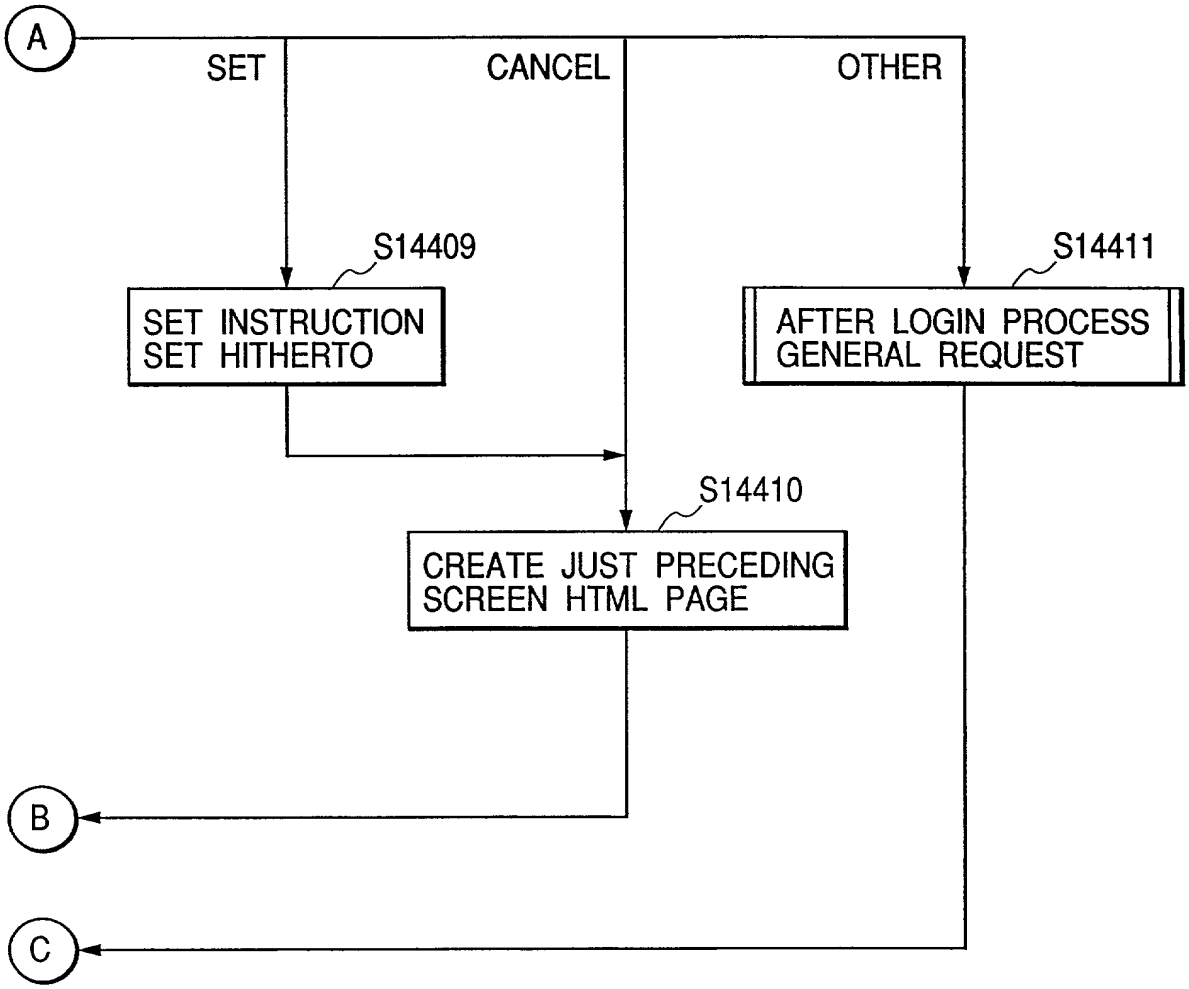

A
SET
CANCEL
OTHER
S14409
SET INSTRUCTION
SET HITHERTO
S14411
AFTER LOGIN PROCESS
GENERAL REQUEST
S14410
CREATE JUST PRECEDING
SCREEN HTML PAGE
B
C

FIG. 145

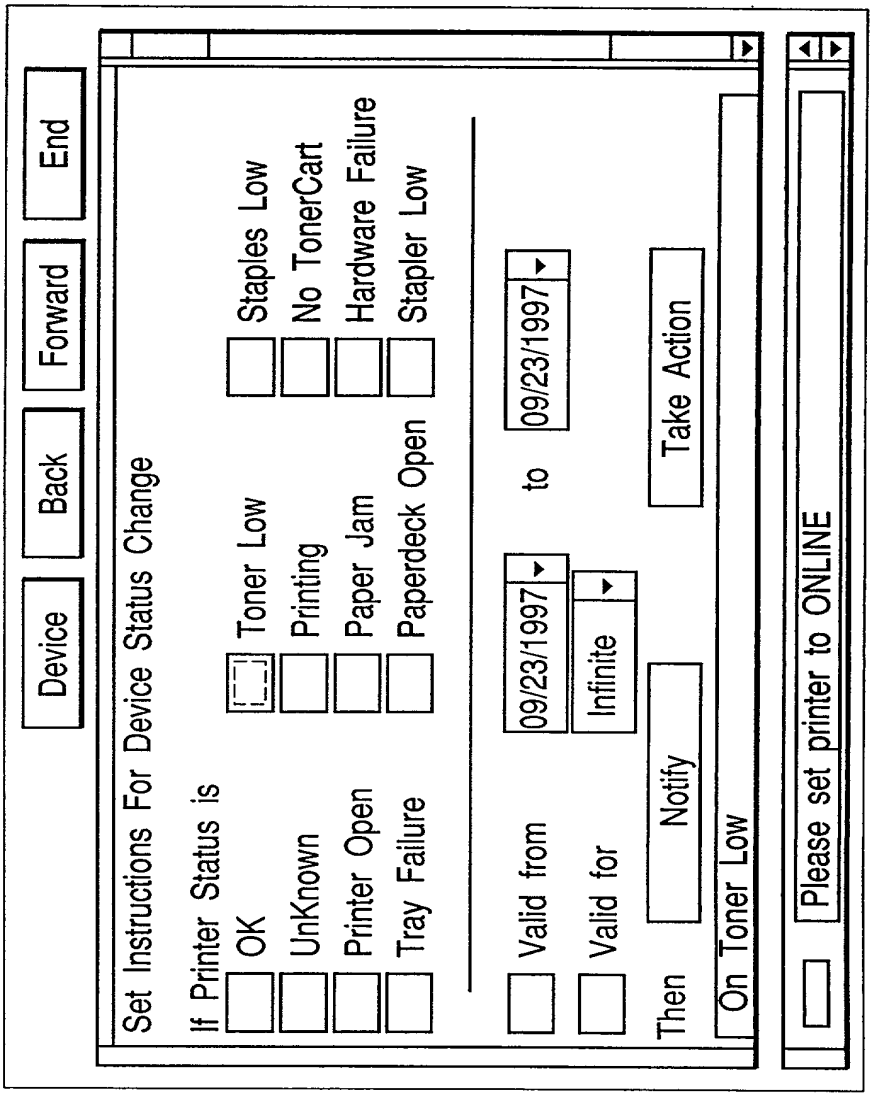

Device
Back
Forward
End
Set Instructions For Device Status Change
If Printer Status is
OK
UnKnown
Printer Open
Tray Failure
Toner Low
Printing
Paper Jam
Paperdeck Open
Staples Low
No TonerCart
Hardware Failure
Stapler Low
Valid from
09/23/1997
to
09/23/1997
Valid for
Infinite
Then
Notify
Take Action
On Toner Low
Please set printer to ONLINE

Fig. 142

~~FIG. 137A~~

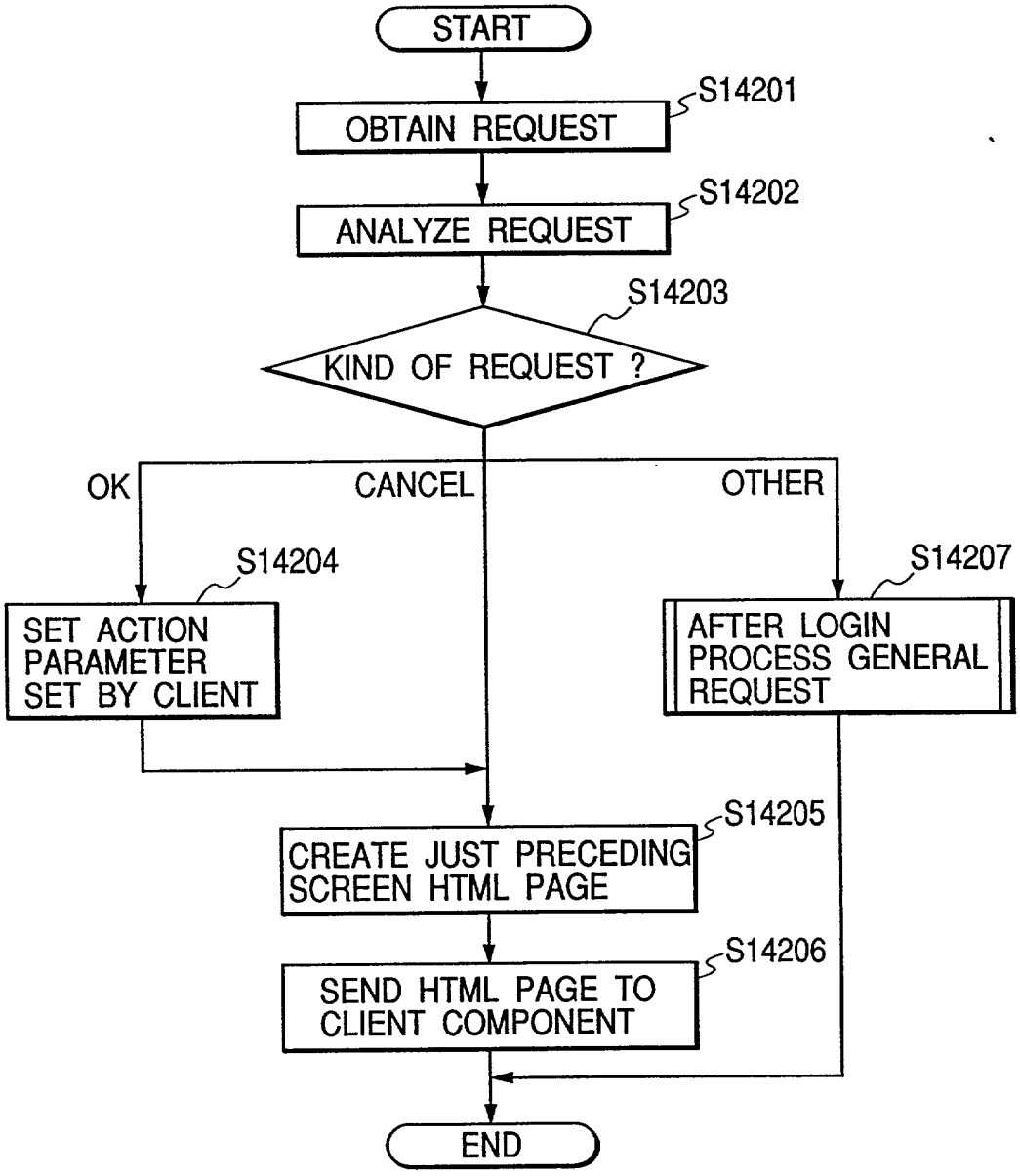
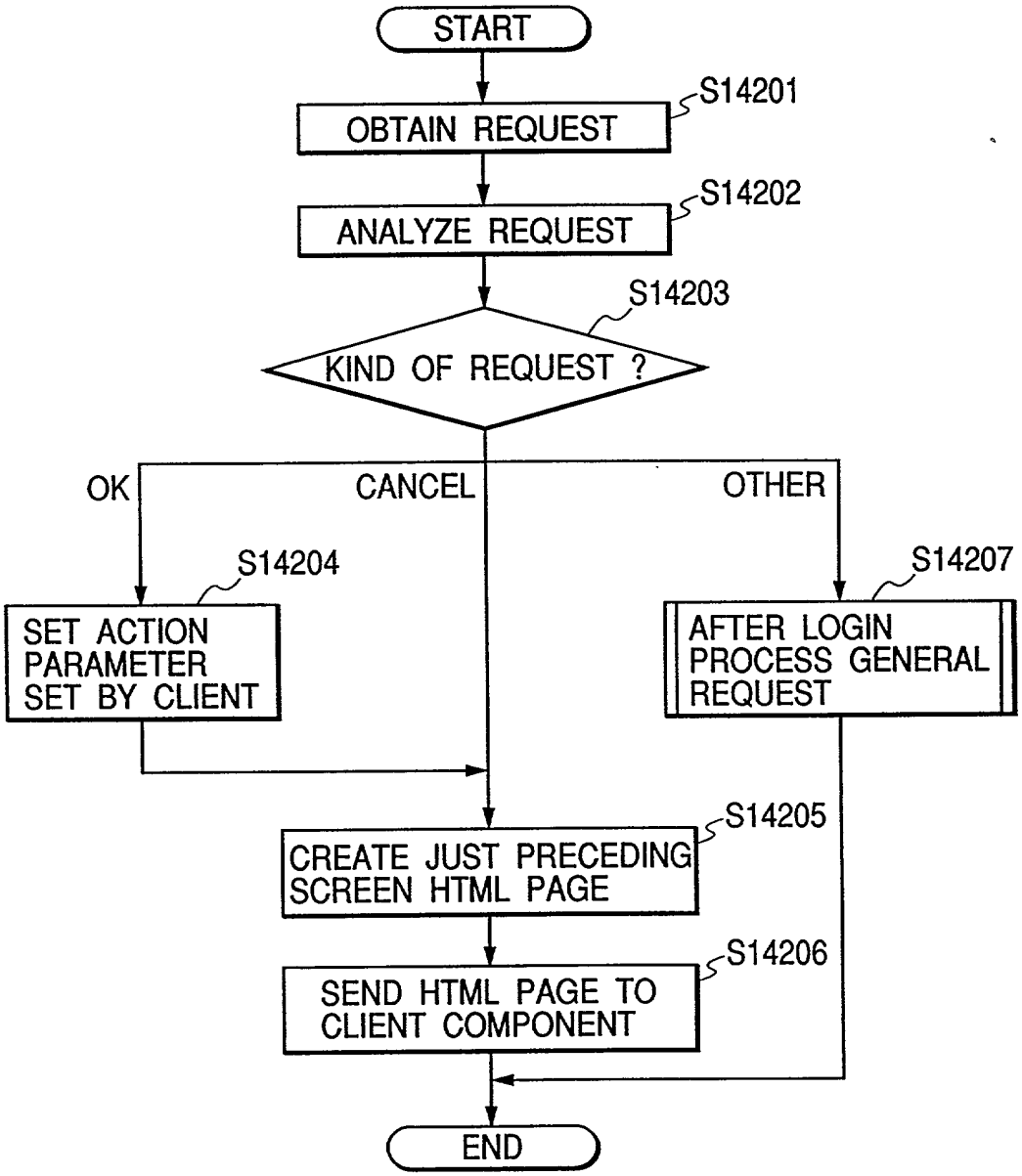


Fig. 142

~~FIG. 137A~~



COMBINED DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
(Page 1)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled APPARATUS AND METHOD FOR PERFORMING A SPECIFIC PROCESS BASED ON A SETUP CONDITION, AND A STORAGE MEDIUM FOR SUCH A PROGRAM,

the specification of which [X] is attached hereto [ ] was filed on _____ as United States Application No. or PCT International Application No. _____

and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b), of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designates at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Country	Application No.	Filed (Day/Mo./Yr.)	(Yes/No) Priority Claimed
Japan	9-280741	October 14, 1997	Yes
Japan	9-280750	October 14, 1997	Yes
Japan	9-295524	October 28, 1997	Yes

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application No.	Filed (Day/Mo./Yr.)	Status (Patented, Pending, Abandoned)
N/A		

I hereby appoint the practitioners associated with the firm and Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to the address associated with that Customer Number.

FITZPATRICK, CELLA, HARPER & SCINTO
Customer Number: 05514

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole or First Inventor SURESH JEYACHANDRAN

Inventor's signature _____

Date _____ Citizen/Subject of India

Residence 6-6-5-904, Hiranuma 2-chome, Nishi-ku, Yokohama-shi, Kanagawa-ken, Japan

Post Office Address _____

_____

COMBINED DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
(Page 2)

Full Name of Second Inventor MASAYUKI TAKAYAMA

Inventor's signature _____

Date _____ Citizen/Subject of Japan

Residence 1312-42, Tobari, Kashiwa-shi, Chiba-ken, Japan

Post Office Address _____

Full Name of Third Inventor ARUNA ROHRA SUDA

Inventor's signature _____

Date _____ Citizen/Subject of India

Residence 30-40-333, Higashi Terao 1-chome, Tsurumi-ku
Yokohama-shi, Kanagawa-ken, Japan

Post Office Address _____

Full Name of Fourth Inventor MASANORI WAKAI

Inventor's signature _____

Date _____ Citizen/Subject of Japan

Residence 6-1-203, Kameido 2-chome, Koto-ku, Tokyo, Japan

Post Office Address _____

Full Name of Fifth Inventor SATOMI TAKAHASHI

Inventor's signature _____

Date _____ Citizen/Subject of Japan

Residence 10-29-407, Hiyoshi 5-chome, Kohoku-ku, Yokohama-shi
Kanagawa-ken, Japan

Post Office Address _____

Full Name of Sixth Inventor NAOKO UEDA

Inventor's signature _____

Date _____ Citizen/Subject of Japan

Residence 12-12, Kurihira 1-chome, Asao-ku, Kawasaki-shi
Kanagawa-ken, Japan

Post Office Address _____